### IMPS Registration & Information Desk Hours of Operation: Plaza Central

<table>
<thead>
<tr>
<th>Time</th>
<th>Day</th>
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<tbody>
<tr>
<td>8:30 a.m. – 2:30 p.m.</td>
<td>Monday, July 15, 2019</td>
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<tr>
<td>8:00 a.m. – 6:30 p.m.</td>
<td>Tuesday, July 16, 2019</td>
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<tr>
<td>8:00 a.m. – 11:30 a.m.</td>
<td>Wednesday, July 17, 2019</td>
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<tr>
<td>8:00 a.m. – 4:30 p.m.</td>
<td>Thursday, July 18, 2019</td>
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<tr>
<td>8:00 a.m. – 4:00 p.m.</td>
<td>Friday, July 19, 2019</td>
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### Monday, July 15

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium 1</th>
<th>Auditorium 2</th>
<th>Auditorium 3</th>
<th>Auditorium 4</th>
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</thead>
<tbody>
<tr>
<td>9:30 a.m.</td>
<td><strong>SHORT COURSE 1:</strong> Structural equation modeling with lavaan Yves Rosseel</td>
<td><strong>SHORT COURSE 2:</strong> Bayesian Inference with JASP Eric-Jan Wagenmakers</td>
<td><strong>SHORT COURSE 3:</strong> Applying Test Equating methods using R Marie Wiberg &amp; Jorge Gonzalez</td>
<td><strong>SHORT COURSE 4:</strong> Introducción al análisis de clases latentes y los modelos de mezclas Jeroen Vermunt</td>
</tr>
<tr>
<td>11:00 a.m. – 11:20 a.m.</td>
<td>Short Course Refreshment Break – Plaza Central</td>
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<tr>
<td>12:50 p.m. – 2:20 p.m.</td>
<td>Lunch on your own</td>
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<tr>
<td>3:50 p.m. – 4:10 p.m.</td>
<td>Short Course Refreshment Break – Plaza Central</td>
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<tr>
<td>6:30 p.m. – 9:00 p.m.</td>
<td><strong>Graduate Student Mixer</strong> – Crowne Plaza Hotel (Meeting Room: Atacama)</td>
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### Tuesday, July 16 – Morning

<table>
<thead>
<tr>
<th>Time</th>
<th>Salón Fresno</th>
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<tbody>
<tr>
<td>8:45 a.m. – 9:00 a.m.</td>
<td>Welcome Francis Tuerlinckx, David Torres Irribarra, Veronica Santelices, and Jorge Gonzalez</td>
</tr>
</tbody>
</table>
| 9:00 a.m. – 10:00 a.m. | **Keynote Speaker:** Eric-Jan Wagenmakers  
*Bayesian multi-model inference for practical and impractical problems*  
*Chair: David Kaplan*  |
| 10:05 a.m. – 10:25 a.m. | Group Photo – Plaza Central |
| 10:25 a.m. – 10:45 a.m. | Refreshment Break – Plaza Central |
### Tuesday, July 16 – Morning – Parallel Sessions

<table>
<thead>
<tr>
<th>Time</th>
<th>Salón Fresno</th>
<th>Aula Magna</th>
<th>Sala Colorada</th>
<th>Sala Matte</th>
</tr>
</thead>
</table>
| 10:45 a.m. – 12:15 p.m. | **Symposium:** Model what you can see, not what you imagine  
Chair: Gunter Maris | **Symposium:** Advanced topics in linking and equating methods  
Chair: Inés Varas | **Symposium:** Methodological contributions to improve policy evaluation in highly uncertain contexts  
Chair: Trinidad González-Larrondo | **e-learning**  
Chair: Patrick Kyllonen |
|                  | Benjamin Deonovic  
Modeling marginal networks | Gabriel Wallin  
Presmoothing method and model selection for kernel equating | Trinidad González-Larrondo  
Partial Identification to improve public policy evaluations | Dmitry Abbakumov  
Measuring student’s activity in MOOCs using extensions of the Rasch model |
|                  | Jean-Paul Fox  
Bayesian covariance structure modeling of structured response data | Inés M. Varas  
Discrete equated scores: a Bayesian nonparametric approach | Diego Carrasco  
Students as raters: a multilevel PCM model to compare classrooms | Yuzhuo Yuan  
Development of a game-based assessment to measure environmental spatial ability |
|                  | Timo Becher  
Towards a neo-classical test theory | Matthew Johnson  
Bayesian linking and equating methods | Verónica Santelices  
Improving weak impact evaluation designs | Hongwook Suh  
Psychometric properties of MOCA: Digital assessment tool for learning analytics |
|                  | Joris Mulder  
Bayes factor testing of multiple intra-class correlations | Jorge González  
Sharp bounds on the score distributions in test score equating | Francisca Calderón  
IRTrees aproach in personality data with multi-format response scale | Anton Béguin  
On test length in mastery tests based on learning objectives |
|                  | Sangbeak Ye  
Item selection methods for e-learning assessments under cognitive diagnosis models |  |  |  |

### Tuesday, July 16 – Morning – Parallel Sessions – continued

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium 2</th>
<th>Auditorium 3</th>
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</thead>
</table>
| 10:45 a.m. – 12:15 p.m. | **Measurement invariance and DIF I**  
Chair: Jonathan Weeks | **Multilevel and longitudinal data analysis**  
Chair: Steve Boker | **Nonparametric modeling**  
Chair: Renske Kuipers |
|                  | Felipe Valentini  
Multiple cause multiple indicators model for unbalanced group designs | Irini Moustaki  
Multivariate longitudinal data with zero inflation: a study of intergenerational exchanges | Rudolf Debelak  
Two new nonparametric local independence tests for the Rasch model |
|                  | Ujin Zhang  
How to select prior variance in Bayesian approximate measurement invariance? | Yadira Peralta  
Bayesian modeling of bivariate associations using piecewise linear mixed-effects models | Heidelinde Dehaene  
Extending the Wilcoxon-Mann-Whitney test for latent variables |
|                  | Thorben Huelmann  
The effect of different ratios of group sizes in multi-group DIF detection | Debby ten Hove  
Interrater reliability for multilevel data: A generalizability theory approach | Adéla Drabinová  
Nonparametric comparison of regression curves for DIF detection |
|                  | Kim De Roover  
Multigroup factor rotation for unraveling factor loading non-invariance | Bartosz Witkowski  
Quality education and economic growth: Causality or co-existence? | Hulya Duygu Yigit  
A nonparametric method for learning in cognitive diagnosis |
|                  | Jingdan Zhu  
Cross-level metric invariance violation explaining for multi-group scalar invariance violation | Kristine O’Laughlin  
Multilevel and dynamical systems approaches to multiple time-scale analysis |  |

12:15 p.m. – 1:30 p.m.  
Boxed lunch provided – Plaza Central
### Tuesday, July 16 – Afternoon – Parallel Sessions 1

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<tr>
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</thead>
<tbody>
<tr>
<td>1:30 p.m. – 3:00 p.m.</td>
<td><strong>Symposium:</strong> Process data in international large-scale assessments: Methods and applications&lt;br&gt;Chair: Lu Ou</td>
<td><strong>Symposium:</strong> Advanced topics in admission university tests&lt;br&gt;Chair: Eduardo Alarcón Bustamante</td>
<td><strong>Networks I</strong>&lt;br&gt;Chair: Denny Borsboom</td>
<td><strong>Response styles</strong>&lt;br&gt;Chair: Terry Ackerman</td>
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<tr>
<td></td>
<td>Denise Reis Costa&lt;br&gt;Application of Kaplan-Meier curves for analysis of process data</td>
<td>Leonor Varas&lt;br&gt;Who is called to produce changes to the admission system?</td>
<td>Ginette Lafit&lt;br&gt;An approach for controlling the false discovery rate in sparse networks</td>
<td>Zechu Feng&lt;br&gt;Modeling random responding behavior and extreme response style in surveys</td>
</tr>
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<td></td>
<td>Paul De Boeck&lt;br&gt;Residual dependencies as a window on process data</td>
<td>Paulina Pérez Mejias&lt;br&gt;College admission test scoring gaps: a multilevel analysis</td>
<td>Teague Henry&lt;br&gt;The impact of endogeneity on network psychometric models</td>
<td>Nana Kim&lt;br&gt;Evaluating competing multiprocess IRT tree models in studies of response style</td>
</tr>
<tr>
<td></td>
<td>Ulf Krohne&lt;br&gt;Investigating response processes using log files and finite state machines</td>
<td>Eduardo Alarcón-Bustamante&lt;br&gt;Partial identification in predictive validity of selection tests</td>
<td>Shirin Rezvanifar&lt;br&gt;Sex differences in subscales of coping schema with network analysis</td>
<td>Mirka Henninger&lt;br&gt;An integration of approaches to modeling response styles in the Divide-by-Total framework</td>
</tr>
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<td></td>
<td>Dylan Molenaar&lt;br&gt;Nonlinear response-level moderation models for product and process data</td>
<td>Claudia Ovalle-Ramírez&lt;br&gt;A Bayesian graphical and probabilistic proposal for bias analysis</td>
<td>Anna Wysocki&lt;br&gt;Comparison of pairwise and partial correlation networks</td>
<td>Allison Ames&lt;br&gt;Modeling changes in response style with longitudinal IRTree models</td>
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<td></td>
<td>Hong Jiao&lt;br&gt;Analyzing log files from multiple items using data mining methods</td>
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<td>Aaron Myers&lt;br&gt;Multilevel item response tree for examining heterogeneity in response styles</td>
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</tbody>
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### Tuesday, July 16 – Afternoon – Parallel Sessions 1 – continued

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<tr>
<th>Time</th>
<th>Auditorium 2</th>
<th>Auditorium 3</th>
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</thead>
<tbody>
<tr>
<td>1:30 p.m. – 3:00 p.m.</td>
<td><strong>Scoring and estimation I</strong>&lt;br&gt;Chair: Daniela Jiménez</td>
<td><strong>Assessment</strong>&lt;br&gt;Chair: Veronica Santelices</td>
<td><strong>Applications I</strong>&lt;br&gt;Chair: Holger Brandt</td>
</tr>
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<td></td>
<td>David Thissen&lt;br&gt;Factor score estimation from the perspective of item response theory</td>
<td>Jonathan Weeks&lt;br&gt;More bang for your buck: Matrix sampling background questionnaire items</td>
<td>Lorrie Schmid&lt;br&gt;Investigating a new measure for children with autism spectrum disorder</td>
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<tr>
<td></td>
<td>Alex Brodersen&lt;br&gt;Penalized estimation of IRT models with multiple location parameters</td>
<td>Jimmy de la Torre&lt;br&gt;A cognitive diagnosis model analysis of a digital literacy assessment</td>
<td>Maggie Yue Zhao&lt;br&gt;Effects of anchoring vignettes on the validity of student self-assessment</td>
</tr>
<tr>
<td></td>
<td>Kazuhiro Yamaguchi&lt;br&gt;Variational Bayes inference for the cognitive diagnostic models</td>
<td>Youn Seon Lim&lt;br&gt;The Mantel-Haenszel statistic for detecting testlet effects in cognitively diagnostic tests</td>
<td>Jessica Cornick&lt;br&gt;A virtually new version of the simulator sickness questionnaire</td>
</tr>
<tr>
<td></td>
<td>Tim Fabian Schafland&lt;br&gt;EM-estimation of multilevel item response theory models with nonlinear effects</td>
<td>Stefano Noventa&lt;br&gt;A graphical taxonomy of assessment models</td>
<td>Jouni Kuha&lt;br&gt;Latent variable models for intergenerational exchanges of family support</td>
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<td>Benjamin Graves&lt;br&gt;GLMM Scores in lme4: Derivations and applications</td>
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<td>Aula Magna</td>
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</table>
| 3:05 p.m. – 3:50 p.m. | **Invited Speaker:** Dani Gamerman  
Dynamic generalized structural equation modeling, with application to the effect of pollution on health  
*Chair: Jean-Paul Fox*  | **State-of-the-Art Speaker:** Kathleen Gates  
Assessing individual differences in non-traditional data structures  
*Chair: Siwei Liu* |
| 3:50 p.m. – 4:10 p.m. | **Refreshment Break – Plaza Central** | |
### Tuesday, July 16 – Afternoon – Parallel Sessions 2

<table>
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<tr>
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</thead>
</table>
| 4:10 p.m. – 5:40 p.m.| **Panel discussion:** How testing organizations have shaped the psychometric research and employment opportunities for psychometricians  
Chair: Alina von Davier | **Symposium:** Non-linear methods and complexity analysis: SEM, network psychometrics and time series analysis  
Chair: Hudson Golino | **Bayesian statistical inference**  
Chair: Ed Merkle | **Process data**  
Chair: Jingchen Liu |
|                     | Alina von Davier  
Jorge Manzi  
Matthias von Davier  
Duanli Yan  
Marilyn Stevenson | Hudson Golino  
Entropy fit index: a new fit measure for dimensionality assessment | Yi-Fang Wu  
Estimating testing time through Bayesian stochastic modeling with PyMC | Yawei Shen  
Investigating students’ testing behaviors using mixed types of process data |
|                     | Steven Boker  
Decomposing expected moments of products of variables for structural equation modeling | Mauricio Garnier-Villarreal  
Bayesian Multidimensional IRT: How far can it go? | Xueying Tang  
Cross-item response process prediction by transformer | |
|                     | Alexander Christensen  
Investigating the stability and generalizability of dimensionality via bootstrap exploratory graph analysis | Joon-Ho Lee  
Sensitivity of Bayesian quantile regression to the choice of scale parameter | Ya Zhang  
Data mining classification of math self-efficacy on large-scale assessment | |
|                     | Robert Moulder  
Tangle: a computationally efficient measure of time series complexity | Sierra Bainter  
Evaluating stochastic search variable selection for applications in psychology | Susu Zhang  
Understanding respondent characteristics through log data and interevent times | |
|                     | Florian Böing-Messing  
Bayes factors for testing order constraints on variance components | | | |

### Tuesday, July 16 – Afternoon – Parallel Sessions 2 – continued

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<th>Time</th>
<th>Auditorium 2</th>
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</thead>
</table>
| 4:10 p.m. – 5:40 p.m.| **Equating**  
Chair: Marie Wiberg | **Cognitive diagnosis models I**  
Chair: Zhiliang Ying |
|                     | Ian Campbell  
Optimal confidence intervals for equivalence testing of test equating invariance | Jing Lu  
A sequential exploratory approach to learning attribute hierarchies from data |
|                     | Jaime Malatesta  
Accuracy of IRT scale linking methods under two competing paradigms | Hueying Tzou  
The impact of Q-matrix structure in multiple-strategy DINA model |
|                     | Xiao Li  
Optimal equating method for test equating in different test cycles | Auburn Jimenez  
An exploratory unified model for conjunctive processes |
|                     | Somayeh Bahmananabadi  
Comparing the accuracy of different equating methods in multidimensional tests equating | Yinghan Chen  
Estimation of Q-matrix with unknown number of attributes |
<table>
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</thead>
</table>
| 5:45 p.m. – 6:15 p.m. | **Dissertation Prize**  
Merijn Mestdagh  
*Prepaid parameter estimation without likelihoods*  
Chair: Carolyn Anderson |
| 6:15 p.m. – 8:15 p.m. | **Poster and Welcome Reception – Plaza Central** |
### Wednesday, July 17 – Morning – Parallel Sessions

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</thead>
</table>
| 8:30 a.m. – 10:00 a.m. | **Panel discussion: Stories of successful careers in psychometrics and what we can learn from them**  
*Chair: Alina von Davier* | **Agencia de Calidad de la Educación**  
Symposium: Addressing psychometric challenges for implementing accountability policies  
*Chair: María de la Luz González* | **Prediction and causal inference**  
*Chair: Merijn Mestdagh* | **Response times I**  
*Chair: Chun Wang* |
| Daunli Yan  
Marie Wiberg  
Carolyn Anderson  
Irini Moustaki  
Susan Embretson  
Jaqueline Meulman | Myriam Lara  
Bridge studies, the Chilean case | Youmi Suk  
Machine learning algorithms for causal inference with cluster-structured observational data | Renske Kuijpers  
Detecting person misfit using the diffusion modeling approach |
| **Maria de la Luz González**  
Addressing psychometric challenges for implementing accountability policies | **Bunga Pratiwi**  
Improving the predictive validity of psychological tests using a statistical learning perspective | **Yang Du**  
The four-parameter normal ogive model with response time |
| **Maximiliano Romero**  
Facing methodological challenges for a multipurpose policy of non-academic assessment | **Ewa Witkowska**  
Money is not everything: The determinants of the education quality | **Huijuan Meng**  
Impact of test design change on test speededness |
| **Gabriela Cares**  
Personal and social development indicators: educational quality new definition | **Weimeng Wang**  
Predictive inferences of bifactor models and simple structure models | | |
| **Marilyn Stevenson**  
SIMCE psychometric history and its challenges | **Jeroen Janssen**  
A SEM-based prediction rule to assess predictive and incremental validity | | |

### Wednesday, July 17 – Morning – Parallel Sessions – continued

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<th>Time</th>
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</table>
| 8:30 a.m. – 10:00 a.m. | **Patient-reported outcomes**  
*Chair: David Thissen* | **Multivariate analysis**  
*Chair: Joost van Ginkel* |
| Oscar Gonzalez  
Evaluating the impact of measurement bias on diagnostic clinical assessments | Sunmee Kim  
Extended redundancy analysis via generalized estimating equations | |
| Jan van Bebber  
The incremental value of LCA-based mixture CAT for PROMIS depression | Naoto Yamashita  
Procrustes penalty function for matching matrices to targets with its applications | |
| Matthew Kerry  
Patient identity: Test design and empirical measurement-equivalence findings | Gyeongcheol Cho  
A cross validation index for generalized structured component analysis | |
| Melanie Wall  
Developing a mental-health screening tool in Mozambique using Lasso regression | Akinori Okada  
Analyzing cognitive similarities among occupational categories by distance-radius asymmetric MDS | |
| Brooke Magnus  
A multidimensional zero-inflated graded response model for ordinal symptom data | Qimin Liu  
Time profile similarity indices with synchronization in nearest neighbor classification | |

10:00 a.m. – 10:20 a.m. **Refreshment Break – Plaza Central**
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:20 a.m. – 11:20 a.m.</td>
<td><strong>Keynote Speaker</strong>&lt;br&gt;<strong>Burr Settles</strong>&lt;br&gt; <em>Improving language learning and assessment with data</em>&lt;br&gt;Chair: Alina von Davier</td>
</tr>
<tr>
<td>11:45 a.m. – 12:45 p.m.</td>
<td><strong>Boxed lunch provided – Plaza Central</strong></td>
</tr>
<tr>
<td>1:00 p.m. – 8:00 p.m.</td>
<td><strong>IMPS 2019 Excursion Santiago City Tour</strong></td>
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### Thursday, July 18 – Morning – Parallel Sessions

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<tbody>
<tr>
<td><strong>8:20 a.m. – 9:50 a.m.</strong></td>
<td><strong>Symposium:</strong> The lavaan ecosystem: Past, present, and future Chair: Terrence D. Jorgensen</td>
<td><strong>Symposium:</strong> Theory and assumptions underlying psychometric practice Chair: Riet van Bork</td>
<td><strong>Causal inference and Mediation I</strong> Chair: Melanie Wall</td>
<td><strong>Item response theory I</strong> Chair: Dylan Molenaar</td>
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<tr>
<td></td>
<td>Ge Jiang equaltestMI: Equivalence testing for measurement invariance</td>
<td>Keith Markus Psychometrics' inherited ontologies: nomological networks, causal structures, and measurement</td>
<td>Rui Lu Exploring the performance of balancing scores with restricted common support</td>
<td>George Engelhard Developing a concept map for Rasch measurement theory</td>
</tr>
<tr>
<td></td>
<td>Irini Moustaki Pairwise likelihood estimation for structural equation modelling in lavaan</td>
<td>Riet van Bork Turning models upside down: a causal theory of error scores</td>
<td>Heather Harris The effect of differential measurement error on treatment effect estimation</td>
<td>Sung-Hyuck Lee Fixed common item parameter calibration with fixed guessing 3PLM</td>
</tr>
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<td></td>
<td>Zachary Fisher Model-implied instrumental variable estimation with MIIVsem</td>
<td>Klaas Sijsma The continuing story of coefficient alpha and the need for closure</td>
<td>Jenn-Yun Tein Application of complier-average causal effect (CACE) model and issues</td>
<td>Daniel Bolt Validation of an IRT model accommodating item complexity</td>
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<td></td>
<td>Ed Merkle lavaan: Merging lavaan with JAGS and Stan</td>
<td>Joost Kruis A general framework for response dynamics with auxiliary information</td>
<td>Jairo Navarrete Assessing change of knowledge in a pretest-posttest educational design</td>
<td>Weldon Smith An application of the continuous response model for subtest data</td>
</tr>
<tr>
<td></td>
<td>Stephanie Lane Automated selection of robust individual-level models using gimme</td>
<td>convex</td>
<td>Happy Yang Small sample criterion for covariate balance in rerandomization</td>
<td>Jianfeng Bi The direction of measurement in multidimensional IRT models</td>
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### Thursday, July 18 – Morning – Parallel Sessions – continued

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<tbody>
<tr>
<td><strong>8:20 a.m. – 9:50 a.m.</strong></td>
<td>Measurement invariance and DIF II Chair: Kim De Roever</td>
<td>Mathematical modeling Chair: Anna-Lena Schubert</td>
<td>Applications II Chair: Edgar Valencia</td>
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<tr>
<td></td>
<td>Henghsiu Tsai Applying bootstrap to the odds ratios methods for DIF detection</td>
<td>Nienke Dijkstra Modeling risk behavior by the censored generalized finite mixture model</td>
<td>Pablo Pérez-Díaz A comparison of hierarchical and bifactor approaches in a short trait-emotional-intelligence measure</td>
</tr>
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<td></td>
<td>Luc Le Evaluation of missing and country effects on gender DIF</td>
<td>Kristof Kovacs POT-MIRT: Psychometric modelling of a cognitive theory of intelligence</td>
<td>Ana Gomes Multilevel analysis of perceived cybercrime risk in European Union</td>
</tr>
<tr>
<td></td>
<td>Burhanettin Ozdemir Employing divide-by-total and divide-by-distractors differential distractor functioning methods to explain DIF</td>
<td>Stijn Verdonck The leaky integrating threshold and its impact on evidence accumulation models</td>
<td>Paula Fariña Propensity to guess, self-confidence and risk-aversion of student in a test</td>
</tr>
<tr>
<td></td>
<td>Yi Dai Comparing methods for detecting mode effect between PBA and CBA</td>
<td>Victor Koleszar A novel approach to estimate the approximate number system</td>
<td>Danhui Zhang An exploration on the development of composite and domain scores</td>
</tr>
<tr>
<td></td>
<td>Van Nguyen Stability of Rasch item difficulty by test delivery modes</td>
<td></td>
<td>Juan Ignacio Venegas-Muggli Reliability and structure validity of a teacher pedagogical competencies scale</td>
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<tr>
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<tr>
<td><strong>Thursday, July 18 – Morning</strong></td>
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<tr>
<td>9:55 a.m. – 10:40 a.m.</td>
<td>Invited Speaker: Gunter Maris</td>
<td>Invited Speaker: Minjeong Jeon</td>
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<tr>
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<td>The wiring of intelligence</td>
<td>A latent space modeling approach to unveiling respondents’ and items’ dependence structures in item response analysis</td>
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<td>Chair: Jorge Gonzalez</td>
<td>Chair: Mark Wilson</td>
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<tr>
<td>10:40 a.m. – 11:00 a.m.</td>
<td>Refreshment Break</td>
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<tr>
<td>11:00 a.m. – 11:30 a.m.</td>
<td>Spotlight Speaker: Marjolein Fokkema</td>
<td>Spotlight Speaker: Thorsten Meiser</td>
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<td></td>
<td>Prediction rule ensembles: Balancing interpretability and accuracy in statistical prediction</td>
<td>IRTree mixture models for decomposing trait-based responses and response styles</td>
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<td>Chair: Jimmy de la Torre</td>
<td>Chair: Matthias von Davier</td>
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<tr>
<td>11:35 a.m. – 12:15 p.m.</td>
<td>Meeting of Members</td>
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<td>12:15 p.m. – 1:30 p.m.</td>
<td>Boxed lunch provided</td>
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**Thursday, July 18 – Afternoon**

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<th>Time</th>
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<tbody>
<tr>
<td>1:30 p.m. – 2:15 p.m.</td>
<td>Invited Speaker Ernesto San Martin</td>
<td>State-of-the-Art Speaker Anna-Lena Schubert</td>
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<td></td>
<td>How to broker the evaluation of public policies? A proposal based on partial identification</td>
<td>Psychometric and mathematical modeling approaches to the measurement of individual differences in cognitive processes</td>
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<td>Chair: David Torres Irribarria</td>
<td>Chair: Paul De Boeck</td>
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| 2:20 p.m. – 3:50 p.m. | **Symposium: Advances in process data analysis**  
Chair: Jingchen Liu | **DEMRE Symposium: A major change of the national college admission system in Chile: opportunities to improve**  
Chair: Daniela Jiménez | **Model uncertainty and robustness**  
Chair: Yves Rosseel | **Cognitive diagnosis models II**  
Chair: Hong Jiao |
|             | Yunxiao Chen  
Measurement of complex problem-solving ability – a lesson from classical psychometric theories | Mónica Silva  
Assessing the predictive validity of an admission test using item level information | David Kaplan  
An approach to addressing multiple imputation model uncertainty using Bayesian model averaging | Steven Culpepper  
An exploratory diagnostic model for ordinal responses |
|             | Alina von Davier  
Learning & measurement of teamwork | Valentina Giaconi  
Rurality gaps in the access to higher education: initial estimations | Hsiu-Ting Yu  
Analyzing extremely unbalanced and correlated data with hierarchical linear models | Xue-Lan Qiu  
An empirical Q-matrix validation method for the polytomous G-DINA model |
|             | Qiwei He  
Exploring action sequence-based approaches in process data analysis | María Inés Godoy  
The complexity of linking over time in college admission | Tong-Rong Yang  
Comparison of methods for quantifying model misspecification in SEM simulations | Jianmin Zhuo  
General CDM joint attribute model formulation and selection |
|             | Jingchen Liu  
An exploration of process data in computer-based assessment | Daniela Jiménez  
The development of core content instruments for college admission | Ken Bollen  
When good loadings go bad: Robustness in factor analysis | Miguel A. Sorrel  
An optimal implementation of the GDI Q-matrix validation method |

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### Thursday, July 18 – Afternoon – Parallel Sessions 1 – continued

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<tr>
<th>Time</th>
<th>Auditorium 2</th>
<th>Auditorium 3</th>
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</table>
| 2:20 p.m. – 3:50 p.m. | **Computer-based testing I**  
Chair: Duani Yan | **Statistical methods**  
Chair: Cees Glas |
|             | Angela Verschoor  
Robust automated test assembly | Raul Ferraz  
Model-based bootstrapping of the chi-square test in structural equation models |
|             | Ya-Hui Su  
The constraint-weighted procedure with the continuous a-stratification index in CAT | Tim Loosens  
Synergized bootstrapping: the whole is faster than the sum of its parts |
|             | K. Chris Han  
Developing multistage tests using D-scoring method | Mariana Curi  
Machine learning for estimation in IRT models |
|             | Paul Jewsbury  
Modeling multistage and targeted testing data with item response theory | Joost Van Ginkel  
Standardized regression coefficients and new estimates for $R^2$ in multiply imputed data |
|             | Edison Choe  
The asymptotic distribution of average test overlap rate in CAT | Raymond Luong  
Replicability in psychology: The problem of familywise Type II error |

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3:50 p.m. – 4:10 p.m.  
Refreshment Break – Plaza Central
## Thursday, July 18 – Afternoon – Parallel Sessions 2

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<tr>
<th>Time</th>
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<th>Sala Matte</th>
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</table>
| 4:10 p.m. – 5:40 p.m. | **Symposium: Meaningful interpretation of measurement results: challenges in applied psychometrics**  
Chair: David Torres Irribarra | **Symposium: Latent variable modeling for intensive longitudinal data**  
Chair: Sebastian Castro Alvarez | **Networks II**  
Chair: Ginette Loft | **Scoring and estimation II**  
Chair: Claus Carstensen |
|               | David Torres Irribarra  
Interpreting psychometric results when model and attributes are defined by legislation | Leonie Vogelsmeier  
Latent Markov factor analysis for exploring longitudinal measurement invariance | Chang Che  
Network analysis: A literature review and related R packages | Leah Feuerstahler  
Characterizing uncertainty in item response model metrics |
|               | Ernesto San Martin  
How to interpret a guessing parameter?  
A strategy based on identifiability | Sy-Min Chow  
Dynamic models of intraindividual variability with varying coefficients | Wen Qu  
Permutation test on logistic regression coefficients with social network data | Elissa Burghgraeve  
Estimating linear and polynomial one-factor models using conditional expectations |
|               | Mark Wilson  
Objectivity and intersubjectivity of measurement across the sciences | Sebastian Castro-Alvarez  
Using latent state-trait theory to analyze intensive longitudinal data | Joseph Grochowalski  
Network analysis of answer key matches for test security investigations | Matthias von Davier  
Non-linear transformations and their effects on the comparability of transformed scores |
|               | Joshua McGrane  
Establishing invariant and substantive units in psychometric modeling | Robin Wester  
Approaching process-outcome research with piecewise latent growth curve models | Shuo (Selena) Wang  
Joint modeling of social networks and item responses | Stella Kim  
Score scale stability of six scoring methods |

## Thursday, July 18 – Afternoon – Parallel Sessions 2 – continued

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium 2</th>
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</table>
| 4:10 p.m. – 5:40 p.m. | **Item response theory II**  
Chair: Keith Markus | **Misfitting response patterns**  
Chair: Anton Béguin |
|               | Ken Fujimoto  
A Bayesian multidimensional item response theory model for small samples | Hassan Mahmoudian  
Application of person fit index to detection of faking responses |
|               | Marta Desimoni  
Facing innovation in national testing program: Rasch item-banking applications | Holger Brandt  
Identifying persons who become inattentive: A dynamic modeling approach |
|               | Danny Avello  
Identifiability and nonparametric estimation of marginal distributions of latent variables | Andrés Christiansen  
Influential analysis for detecting aberrant school performances in high-stakes assessments |
|               | Xue Zhang  
Measurement bias and error correction in a two-stage estimation | María Dolores Nieto  
Does modeling wording effects help recover uncontaminated person scores? |
|               | Hyun-Woo Nam  
Bayesian IRT equating: An alternative for small sample and complex design | Yuan Liu  
How the omitted missingness reflects test-taking motivation? A new method |
## Friday, July 19 – Morning – Parallel Sessions

### Time | Salón Fresno | Aula Magna | Sala Colorada | Sala Matte
--- | --- | --- | --- | ---
8:30 a.m. – 10:00 a.m. | **Symposium: Modeling heterogeneity with time series data**  
Chair: Siwei Liu | **Symposium: A future for psychometric theory**  
Chair: Maarten Marsman | **Structural Equation Modeling**  
Chair: Ken Bollen | **Thurstonian IRT**  
Chair: Edward Ip
- Peter Halpin  
Estimation and prediction of the Hawkes process with random effects
- Maarten Marsman  
Bridging the psychometric disciplines of individual differences and individual dynamics
- Hannelies de Jonge  
Dealing with artificially dichotomized variables in meta-analytic structural equation modeling
- Safir Yousfi  
Pseudolikelihood person parameter estimates for MIRT-models of forced-choice data
- Lu Ou  
A methodological review on qualitative heterogeneity in quantitative changes
- Lisa Wijsen  
A look into the future of psychometrics
- Ben Kelcey  
A bias-corrected limited-information estimator for small scale multilevel/categorical SEMs
- Kensuke Okada  
Observed-score reliability and its approximate index in paired-comparison Thurstonian IRT
- Siwei Liu  
Dynamic mixture modeling: identifying unobserved groups in dynamic processes
- Denny Borsboom  
Why network psychometrics blocks reductionism in psychopathology research
- Po-Hsien Huang  
Sparse estimation for SEM via R package lslx
- HyeSun Lee  
Evaluation criteria for measurement invariance tests in Thurstonian IRT model
- Cara Arizmendi  
Clustering of idiographic factor structures
- Gabriela Lunansky  
Personality, resilience, and psychopathology: Slow and fast interacting network processes
- Mariska Barendse  
On the use of pairwise maximum likelihood estimation for clustered data
- Xiaohong Gao  
Test and profile reliability of social and emotional learning assessment
- Philippe Rast  
Multivariate generalized autoregressive conditional heteroscedasticity models for within-person variability research
- Albert Man  
A mode-jumping algorithm for Bayesian factor analysis

### Friday, July 19 – Morning – Parallel Sessions – continued

### Time | Auditorium 2 | Auditorium 3
--- | --- | ---
8:30 a.m. – 10:00 a.m. | **Reliability in latent variable models**  
Chair: Rianne Janssen | **Response times II**  
Chair: Stijn Verdonck
- Cees Glas  
Reliability issues in high-stakes educational tests
- Po-Hsi Chen  
Detecting rapid guessing behaviors in testlet items
- Hong Jiao  
Joint modeling of responses and response time for subdomain diagnosis
- Ricardo Primi  
Acquiescence and attitude-achievement paradox in PISA 2012
- Eduardo García-Garzon  
Assessing general factor reliability in exploratory bi-factor modelling.
- Zhaojun Li  
The differentiation of three types of conditional dependence
- Mark Wilson  
Measuring sub-dimensions and composites
- Daniella Rebouçãs  
Bivariate change-point analysis with response time and item responses
- Joseph Rios  
Ability estimation accuracy under varying non-effortful responding types and rates

10:00 a.m. – 10:20 a.m. | Refreshment Break – Plaza Central
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| 10:20 a.m. – 10:50 a.m.| **Spotlight Speaker:** Hyeon-Ah Kang  
*Detecting item parameter drift online using response and response times*  
Chair: Hua-Hua Chang | **Spotlight Speaker:** Adrian Quintero  
*Selecting the number of factors in Bayesian factor analysis*  
Chair: Irini Moustaki |
| 10:55 a.m. – 11:55 a.m.| **Career Award**  
Susan Embretson  
*Modeling cognitive processes, skills and strategies in item responses: implications for test and item design*  
Chair: David Thissen |                                                               |
| 11:55 a.m. – 1:10 p.m.| Boxed lunch provided – Plaza Central |                                                               |
### Friday, July 19 – Afternoon – Parallel Sessions

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<tr>
<td>1:10 p.m. – 2:40 p.m.</td>
<td><strong>Symposium: Recent developments in school value-added modeling</strong>&lt;br&gt;Chair: Ernesto San Martín&lt;br&gt;Cohort varying, temporally dynamic, value-added models</td>
<td><strong>Invited Symposium: Recent advances in assessing small group collaborations</strong>&lt;br&gt;Chair: Peter Halpin&lt;br&gt;Estimating an individual’s contribution to small group performance</td>
<td><strong>Models for dynamics and learning</strong>&lt;br&gt;Chair: Klaas Sijtsma&lt;br&gt;IRT models for learning with item-specific learning parameters</td>
<td><strong>Causal inference and Mediation II</strong>&lt;br&gt;Chair: Jee-Seon Kim&lt;br&gt;Causal effects based on Poisson regression models</td>
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<td>Ernesto San Martín</td>
<td>Patrick Kyllonen</td>
<td>Albert Yu</td>
<td>Axel Mayer</td>
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<td>Exploring complete school effectiveness via quantile value-added</td>
<td>Nafisa Awwal</td>
<td>Tyler Matta</td>
<td>Davood Tofighi</td>
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<td>Garritt Page</td>
<td>Validating measures of small group collaboration: a process perspective</td>
<td>Sensitivity analysis in longitudinal mediation model</td>
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<td>Joniada Milla</td>
<td>Augmenting multidimensional value added with non-cognitive skills</td>
<td>Anqi Li</td>
<td>Kai Wang</td>
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<td>Edgar Valencia</td>
<td>Further findings from modeling data in collaborative assessments</td>
<td>Detecting item effects with cognitive diagnostic model for learning trajectories</td>
<td>Maximum likelihood analysis of mediation models with treatment-mediator interaction</td>
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<td>How stable are value-added indicators across time? an empirical analysis</td>
<td>Peter Halpin</td>
<td>Augustin Kelava</td>
<td>Jiaqing Zhang</td>
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<td>Joniada Milla</td>
<td>Designing and modeling “new” item types for assessments involving small groups</td>
<td>A nonlinear dynamic latent class structural equation model</td>
<td>Two-Step BART: Estimate average treatment effects when treatment is latent</td>
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<td>Satoshi Usami</td>
<td>A unified framework of longitudinal models to examine reciprocal relations</td>
<td>Hye-Seong Kim</td>
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<td>Octavio Bechger</td>
<td>Measurement invariance and DIF III&lt;br&gt;Chair: Timo Bechger</td>
<td>Computer-based testing II&lt;br&gt;Chair: George Engelhard</td>
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<tr>
<td>1:10 p.m. – 2:40 p.m.</td>
<td>Edward Ip</td>
<td>Multidimensional DIF, part A: A theoretical analysis of fixed-effects DIF</td>
<td>Haruhiko Mitsunaga</td>
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<td>Terry Ackerman</td>
<td>Multidimensional DIF, part B: Examining two-dimensional DIF using projective IRT modeling</td>
<td>An automated method to detect enemy items using NLP approach</td>
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<td>Chansoon (Danielle) Lee</td>
<td>Detection of differential item functioning under small sample size conditions</td>
<td>Dongmei Li</td>
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<td>Hye-Eun Seok</td>
<td>A multi-dimensional approach to lack of invariance in measurement invariance</td>
<td>Stabilizing measurement precision through scale transformation and adaptive testing</td>
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<td>Saemi Park</td>
<td>A relation between multidimensionality and uniform DIF</td>
<td>Meichu Fan</td>
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<td>Comparing methods for calibrating pretest items with fixed operational forms</td>
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| 2:40 p.m. – 3:25 p.m. | Early Career Award  
Dylan Molenaar  
*Beyond Simple main effects: challenges to the substantive interpretation of higher-order statistical effects*  
Chair: Sy-Miin Chow |
| 3:25 p.m. – 3:40 p.m. | Refreshment Break – Plaza Central |
| Time          | Salón Fresno                                                                 |
| 3:40 p.m. – 3:50 p.m. | Chancellor’s Appreciation Speech  
Ignacio Sánchez  
*Rector Pontificia Universidad Católica de Chile*  
Chair: Francis Tuerlinckx |
| 3:50 p.m. – 4:50 p.m. | Presidential Address  
Francis Tuerlinckx  
*Things I have learnt so far*  
Chair: Dan Bolt |
| 4:50 p.m. – 5:40 p.m. | Awards and Closing Ceremony  
Chair: Dan Bolt |
| 7:00 p.m. – 10:00 p.m. | Conference Banquet – Club de la Unión |