Ion Mobility Interest Group

High Resolution Ion Mobility: Toward The Need for Standardized Data and Reporting

Tuesday, June 2, 2026

San Diego, CA

Presiding: Christopher Chouinard (Clemson University) and Carlos Larriba-Andaluz (Purdue University)

Summary: The workshop focused on finding consensus around the need for standardized data reporting in Ion Mobility. As ion mobility spectrometry continues to evolve toward increasingly higher resolving powers, the need for robust and standardized data and metadata reporting is becoming increasingly critical across the field. While tremendous progress has been made in instrumentation and applications, the lack of unified reporting practices and the emergence of new parameter dependencies is beginning to limit reproducibility, cross-platform comparison, long-term data reuse, and the development of community resources such as databases, advanced theory and machine learning models. The workshop included five flash talks (5 minutes each), highlighting the importance of standardized data reporting and demonstrating how advances in IMS instrumentation have achieved separation performance that rivals theoretical limits. The workshop culminated in a moderated panel discussion focused on building consensus around minimum reporting requirements, extensibility, and pathways toward community adoption. The panel brought together representatives from instrument vendors, academia, and journal editors, with the ultimate goal of establishing a simple, one-click, universally interpretable reporting format that can be generated directly by instrument software and broadly adopted by the community. A survey was also distributed among the interest group, and the results have since been collected and analyzed, with plans for publication at a later stage.

The speakers were as follows:

1. Carlos Larriba-Andaluz (Associate Professor at Purdue University) described the idea of a single report format file for IMS.
2. Christopher Chouinard (Associate Professor at Clemson University) focused on showcasing high resolution results using SLIM and DTIMS platforms
3. Gabe Nagy (Associate Professor at University of Utah) described how Moments of Inertia can be used to separate ions in a Cyclic IMS, but no universal theory exists to explain the separation.
4. Bela Paizs, (Researcher at Rosalind Franklin Institute, and CEO of deshape**)** described the impact that standardized data would have in improving simulations and theory while showcasing results from TIMS instruments.

The panel was composed of:

1. Ian Kilby Webb (Associate Professor, Indiana University Indianapolis, editor for Journal of Mass Spectrometry)
2. Ruwan Kurulugama (Agilent)
3. Daniel DeBord (MOBILion)
4. Christopher Wootton (Bruker)
5. Jakub Ujma (Waters)
6. Matt Bush (Professor, Washington University)

Workshop attendance: 85-100 people.