

Turn-key Orbitrap™ Charge Detection Mass Spectrometry (CDMS)

What is CDMS? CDMS enables mass determination of individual ions by measuring both their m/z and charge. Orbitrap-based CDMS is increasingly used for the characterization of high-mass and heterogeneous systems, including AAV capsids and glycosylated biotherapeutics.

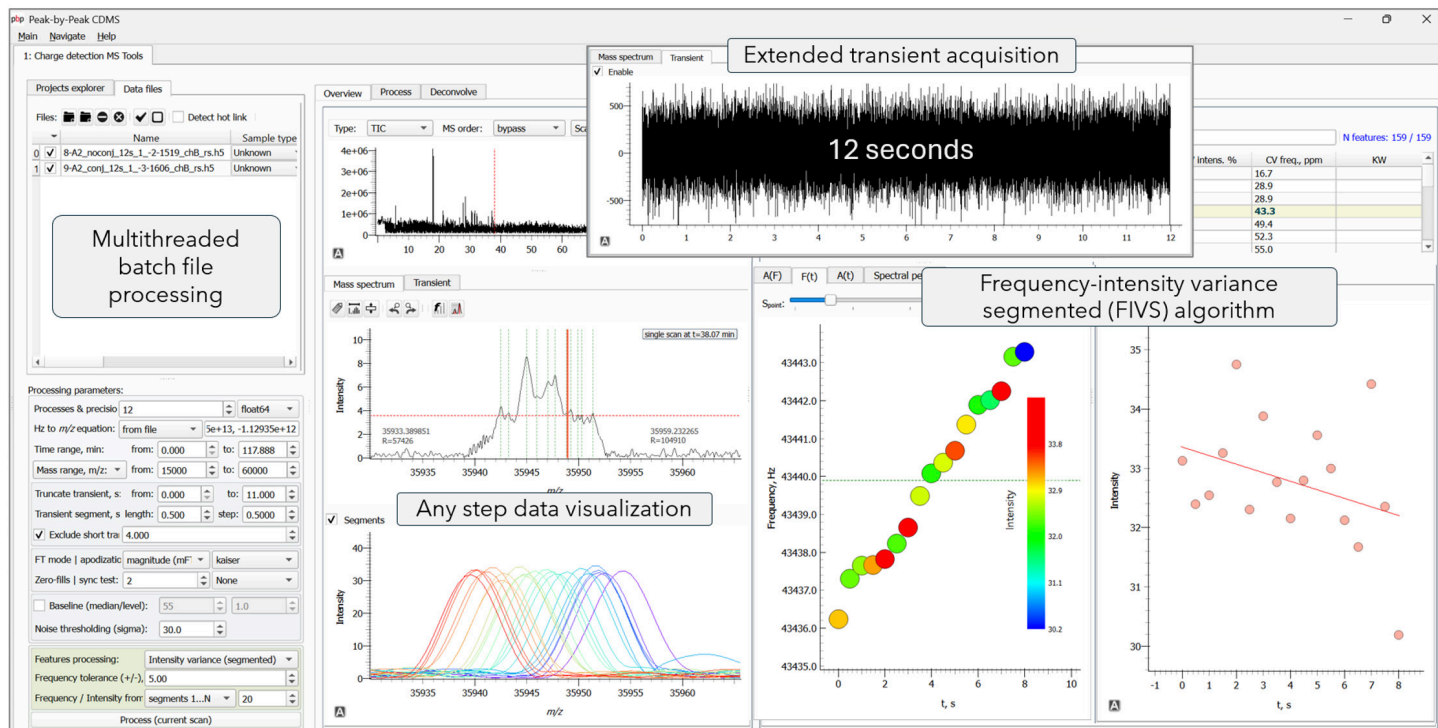
Spectroswiss provides an integrated hardware-software workflow for Orbitrap-based CDMS: **Your Orbitrap + FTMS Booster X2T + Peak-by-Peak CDMS**

FTMS Booster X2T: External high-performance data acquisition system for accessing time-domain ion signals, or transients, from Orbitrap platforms.



FTMS Booster X2T captures Orbitrap time-domain ion signals, or transients, in parallel with standard acquisition. Can be interfaced with any Orbitrap, usually a Q Exactive UHMR™.

Peak-by-Peak CDMS: Dedicated software workflow for processing transient data, charge calibration, clustering, filtering, visualization, and reporting.

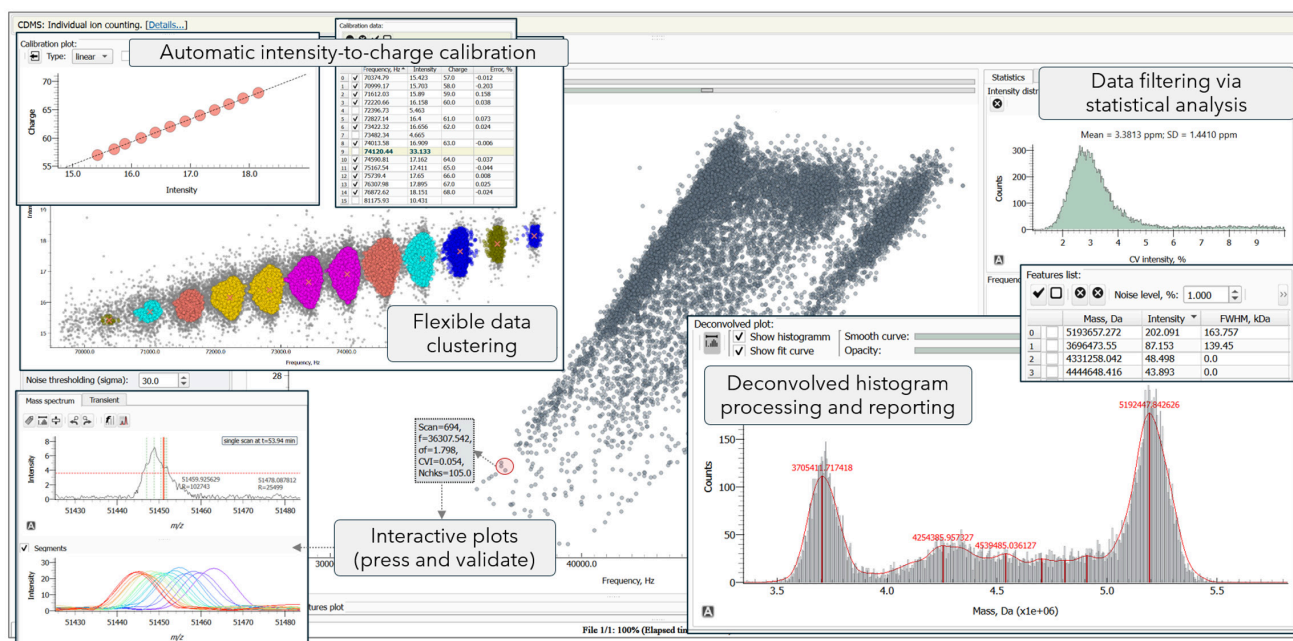


Application support:

Expert guidance for implementation, workflow optimization, and interpretation of CDMS data.

Peak-by-Peak CDMS Workflow

- Complete Peak-by-Peak project infrastructure for CDMS data management
- Transient and mass spectrum visualization with comparison between datasets
- Frequency/ m/z calibration tools and automatic charge calibration
- Proprietary frequency-intensity variance segmented (FIVS) algorithm
- Fast clustering with user-defined axes scaling and statistical post-filtering
- Flexible deconvolution, binning, smoothing, and parallel CPU processing



CRO Service: AAV Capsid CDMS

AAV CDMS is powerful, but experiments must be optimized carefully. We offer Orbitrap-based CDMS analytical services from Lausanne, Switzerland:

- Empty, partially filled, filled, and overfilled capsid mass and ratio analysis
- Analysis of conjugated AAVs for estimating ligand/capsid ratio
- Expert interpretation of transient-enabled Orbitrap CDMS data
- Complementary measurements: intact mass and bottom-up MS of VP1-3

Selected customer publications:

- **Analyses of Individual Singly Charged Ions Using a High-Field Orbitrap Analyzer**, Heck et al., *Anal. Chem.* (2026) 98, 20, 15250–15258
- **Prolonged Trapping of Adeno-Associated Virus Capsids Reveals that Genome Packaging Affects Single-Ion Mass Spectrometry Measurements**, Heck et al., *J. Am. Chem. Soc.* (2025) 147, 13, 10925–10934
- **Ultra-Long Transients Enhance Sensitivity and Resolution in Orbitrap-Based Single-Ion Mass Spectrometry**, Heck et al., *Nature Methods* (2024) 21, 619–622

Meet us at ASMS, Booth 315 to discuss Orbitrap-based CDMS

Ask about FTMS Booster X2T, Peak-by-Peak CDMS, and AAV CRO analysis

To learn more about our hardware or software tools or to get your free evaluation license, you are most welcome to visit <https://spectroswiss.ch/> and to contact us at info@spectroswiss.ch