Molecular Level Analysis of DOM along a transect of the Harney River

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BACKGROUND
Our objective was to characterize the chemical complexity of dissolved organic matter (DOM) along the Harney River using ESI-TIMS-FT-ICR MS.

METHODOLOGY
1. 2 L surface water samples were collected during the dry season.
2. SPE performed using Agilent PPL® cartridges.
3. SPE-DOM (denatured ethanol) analyzed in a Custom built Solarix 7T (-) ESI-TIMS-FT-ICR MS
4. Chemical formula constraint: C_{1-50}H_{1-100}O_{1-20}N_{1-4}S_{1-2}
5. Isomeric content estimated using in-house Python SAME algorithm.

RESULTS
DOM Chemical Characteristics

METHODS
Water Sample
SPE
SPE-DOM
ESI-TIMS-FT-ICR MS
Data Processing

DOM compositional features

Chemical signature of DOM

DOM Isomeric complexity

TIMS-FT-ICR MS is a useful technique to distinguish DOM signatures across different environments.

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