

Contribution ID: 160 Type: Poster not-in-competition (Graduate Student) / Affiche non-compétitive (Étudiant(e) du 2e ou 3e cycle)

## (POS-37) Comprehensive Modeling of Ion Source Physics

Tuesday 10 June 2025 18:02 (2 minutes)

This research project aims to develop numerical models for key physical processes in ion sources, including electron emission from filaments, RF antenna power coupling to the plasma, and Coulomb collisions driving electron thermalization. These models will be implemented using an explicit Particle-In-Cell (PIC) code to simulate plasma behavior and benchmark the results against experimental diagnostics at D-Pace. The project is a four-year collaboration between the University of Victoria and D-Pace, funded by MITACS, with the goal of improving the understanding and optimization of ion source performance.

## Keyword-1

Plasma Modeling

## Keyword-2

Particle-In-Cell Simulation

## Keyword-3

Ion Source Diagnostics

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**Session Classification:** DPP Poster Session & Student Poster Competition | Session d'affiches DPP et concours d'affiches étudiantes (7)

**Track Classification:** Technical Sessions / Sessions techniques: Plasma Physics / Physique des plasmas (DPP)