Contribution ID: **548** Type: **Invited talk in the parallel session**

Learning the properties of our Galaxy's dark matter with Stellar Streams

Thursday, 8 July 2021 16:30 (25 minutes)

The Galactic halo is criss-crossed by long stellar streams that are probably the remnants of defunct globular clusters and dwarf galaxies. I will present the recent discoveries of these structures from Gaia mission data. While streams clearly inform us in a direct way about past accretions onto our Galaxy, their most promising property is that they allow us to measure the Galactic acceleration field and they may allow us to quantify the prevalence of small-scale of dark matter overdensities in the halo. I will also present some novel unsupervised machine-learning methods that we are developing to fit the acceleration field from these streams (and field stars) while also learning the transformation from observed kinematic coordinates to canonical action-angle variables.

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Session Classification: Dark Matter: Beyond LCDM

Track Classification: Dark Matter: Dark Matter: Beyond LCDM