

IDM 2022



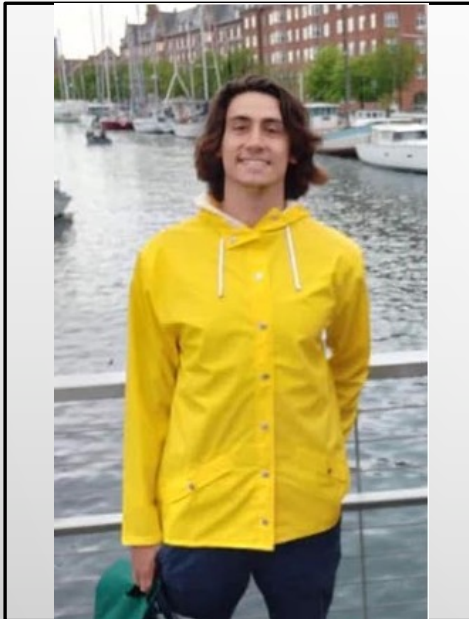
14th International Conference on
Identification of Dark Matter

18-22 July 2022
Vienna, Austria

DENSITY FUNCTIONAL THEORY GUIDES THE SEARCH FOR DARK MATTER PARTICLES IN DIRECT DETECTION EXPERIMENTS

MAREK MATAS AND NICOLA A. SPALDIN
MATERIALS THEORY, D-MATL, ETH ZURICH

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- WE USE ELECTRONIC STRUCTURE CALCULATIONS TO MODEL DETECTOR MATERIALS
- WE IDENTIFY GENERAL DM-SM INTERACTIONS WITHIN EFT
- USE DFT TO OBTAIN ELECTRON-WAVEFUNCTIONS
- CALCULATE SCATTERING RATES FOR EXISTING AND FUTURE DIRECT DETECTION EXPERIMENTS.