iP2I LES 2 INFINIS LYON SEMINAR

«Probing the Dark Sector One Electron at a Time: Skipper CCDs and the DAMIC-M Experiment»

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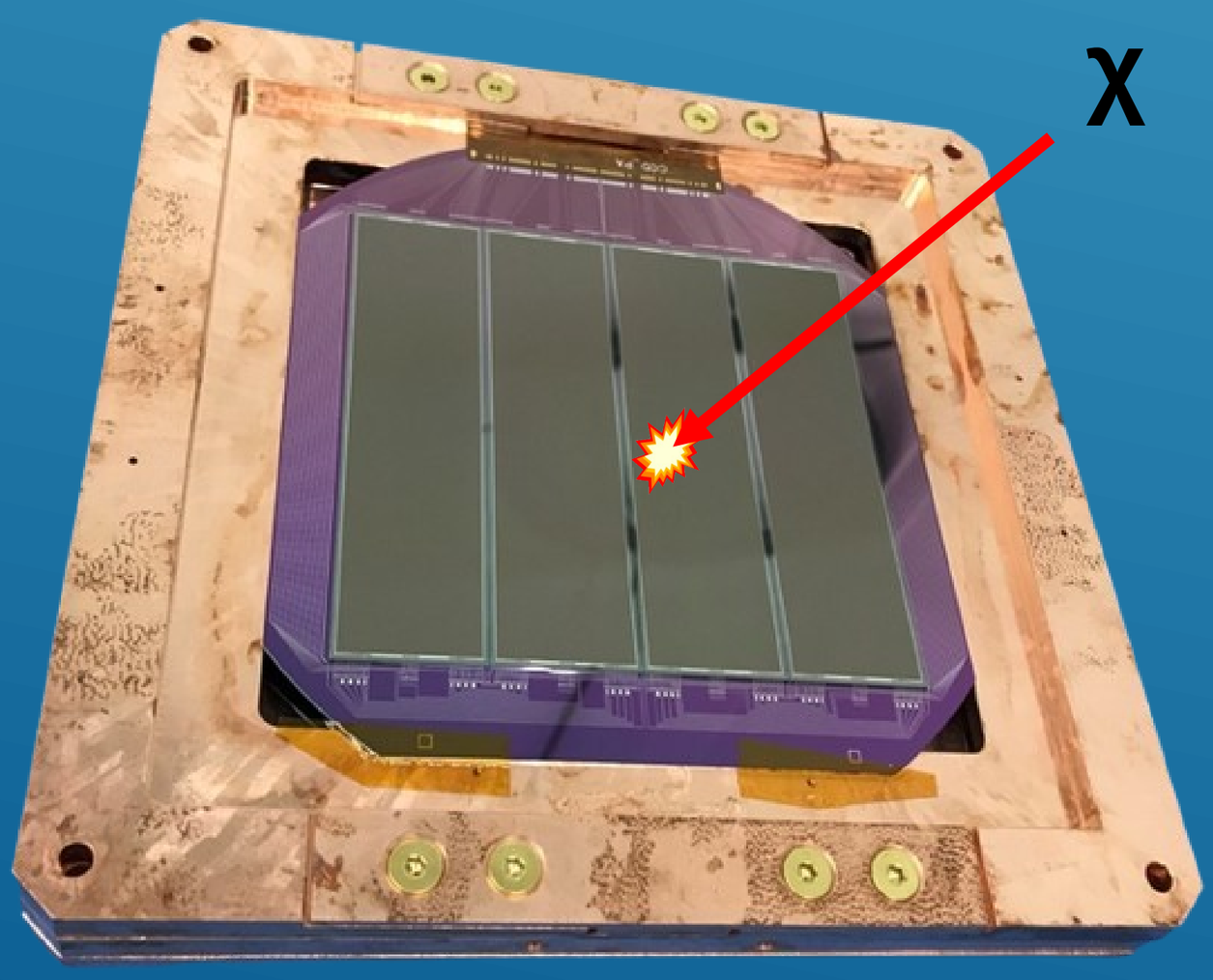
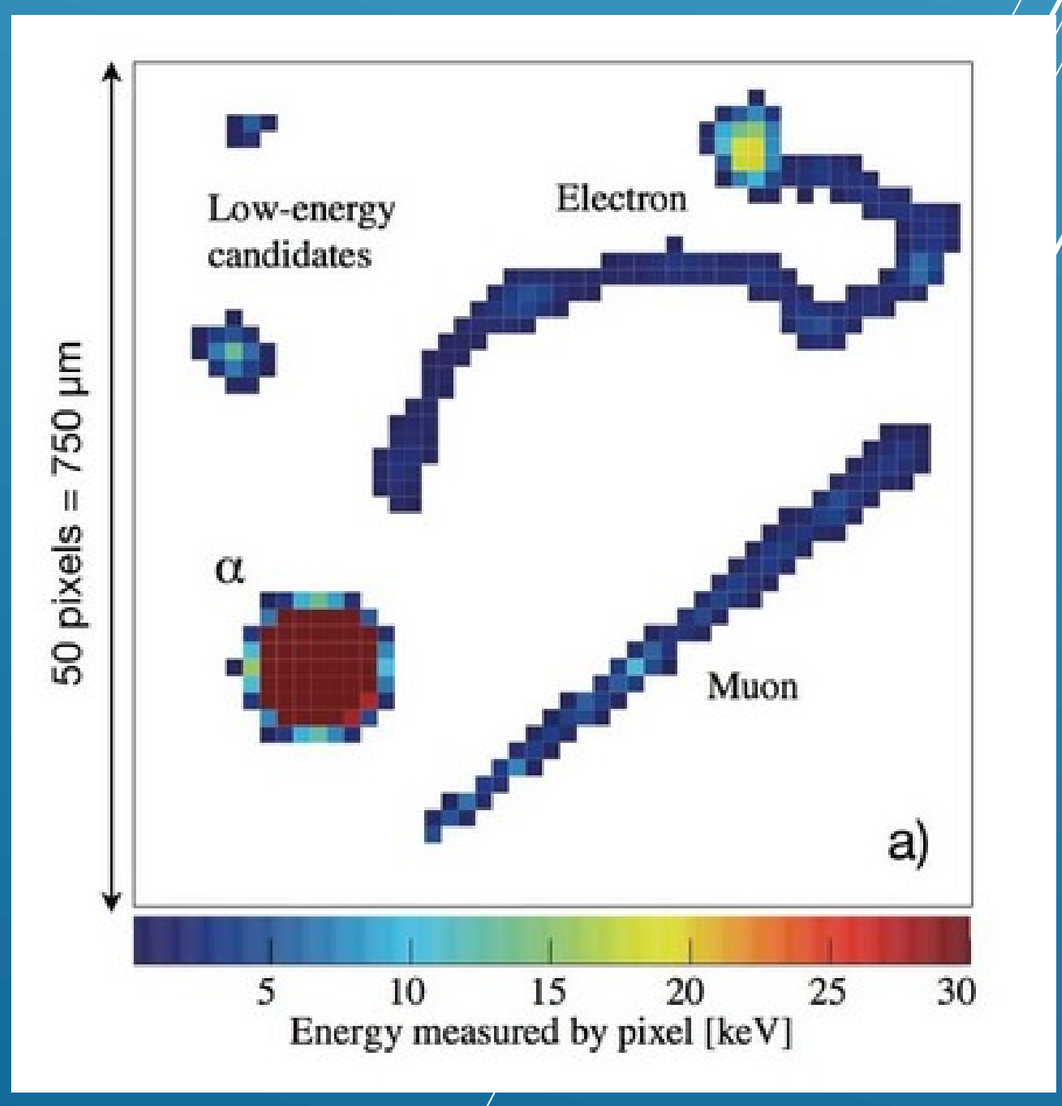
The search for light dark matter has entered a regime where detecting single ionization electrons is both necessary and experimentally achievable. The DAMIC-M experiment, located at the Laboratoire Souterrain de Modane, employs Skipper CCDs capable of repeatedly measuring the charge in each pixel, enabling single-electron resolution with sub-electron noise. This technology opens a unique window onto dark matter candidates in the MeV-to-GeV mass range that interact with electrons in silicon. In this talk, I will present the latest results from data collected with the Low Background Chamber (LBC) prototype of the DAMIC-M experiment. These measurements demonstrate world-leading sensitivity to dark matter-electron scattering and allow us to probe well-motivated regions of parameter space, including for the first time scenarios where dark matter is produced via freeze-in or some freeze-out mechanisms. I will then discuss the current path toward the full DAMIC-M detector, expected to take its first data in 6 months.





March 24, 2026 - Amphi Dirac, 14h