

# Sub-GeV dark matter and neutrino searches with Skipper-CCDs: status and prospects.

## Executive Summary

A. M. Botti<sup>a,b</sup>, M. Cababić<sup>a,b</sup>, J. Estrada<sup>b</sup>, G. Fernandez-Moroni<sup>b</sup>, M. Sofo Haro<sup>b,c</sup>, and J. Tiffenberg<sup>b</sup>

<sup>a</sup> Department of Physics, FCEyN, University of Buenos Aires and IFIBA, CONICET, Buenos Aires, Argentina

<sup>b</sup> Fermi National Accelerator Laboratory, PO Box 500, Batavia IL, 60510, USA

<sup>c</sup> Centro Atómico Bariloche, CNEA/CONICET/IB, Bariloche, Argentina

### What is this contribution about?

We describe the working principle of Skipper-CCDs and the prospects to implement them in rare-events searches.

### Why is it relevant/interesting?

With Skipper-CCD we achieved an unprecedented sensitivity to explore physics processes with energy transfers as low as the silicon bandgap; a promising scenario for sub-GeV dark-matter searches

### What has been done?

We have achieved a sub-electron resolution, which allows us to separate different backgrounds from a signal of a few electrons.

### What is the result?

With the next generations of Skipper-CCD detectors, we can explore a region in the parameter space up to seven orders of magnitude lower than the current limits in the sub-GeV mass range.

