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# ARCADIA: sensor development and chip design for low-power, large area FD-MAPS

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The ARCADIA collaboration is developing Fully-Depleted Monolithic Active Pixel Sensors (FD-MAPS) with an innovative sensor design, providing efficient charge collection and fast timing over a wide range of operational and environmental conditions. The design targets very low power consumption, of the order of 20 mW $cm^{-2}$ at 100 MHz $cm^{-2}$ hit flux, to enable air-cooled operation. In November 2020, the collaboration finalized the first design of a prototype with $1.3 \times 1.3$ $cm^2$ active area, consisting of $512 \times 512$ pixels with 25 $\mu$m pitch. This prototype is currently being produced in a first engineering run together with additional test structures of pixel and strip arrays. In this contribution, we will present the current status of the project and the design of the first prototype. Additionally, we will discuss ongoing developments with a special focus on ultra-fast timing applications.

## TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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