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Tunable atom chip potentials for confined atomic sensors JAMES STICKNEY, Space Dynamics Laboratory, BRIAN KASCH, SPENCER OLSON, BETHANY KROESE, JONATHON CROW, Air Force Research Laboratory, ERIC IMHOF, Air Force Institute of Technology, MATTHEW SQUIRES, Air Force Research Laboratory — Devices that employ 1D potentials now have a tool with which precise potentials may be generated from a double layer atom chip. Based on this multi-wire method, we have designed, fabricated, and tested an atom chip capable of controlling the 1D potential using optimal and reduced power wire configurations. We have also shown the initial operation of a tunable atom chip by trapping atoms as cold as 2 μK in various potential configurations. We will present our current results on precision tuned atom chip potentials and its potential for precision measurements using atom interferometry.

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