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Effect of SOI on the Acoustoelectric Current YONATAN ABRANYOS, GODFREY GUMBS, Hunter College of CUNY — With a need to increase the accuracy of the measured acoustoelectric current for metrological applications, we investigate the role played by the Rashba spin-orbit (SO) coupling. With a model Hamiltonian which takes into account the confinement of electrons within a narrow channel between split metal gates, we demonstrate that the SO interaction increases the confinement of a captured electron in a moving quantum dot and may consequently improve the quenching of the quantized acoustoelectric current.

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