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Memory Effects in Capacitive Devices JULIAN MARTINEZ, Student Graduate, MASSIMILIANO DI VENTRA, YURIY PERSHIN — We suggest a possible realization of a solid-state memory capacitive (memcapacitive) device [1]. Our approach relies on a slow polarization rate of a medium between capacitor plates. We consider a multilayer sandwich structure with a non-linear electronic transport (tunneling) between the layers and show memory phenomena in such a system. Our results indicate a possibility of information storage in memcapacitive devices as well as an interesting behavior of such devices in electronic circuits.

[1] M. Di Ventra, Y.V. Pershin and L.O. Chua, Proc. IEEE 97, 1717 (2009).

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