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Superconducting proximity effect in a synthetic helical liquid MARIANA MALARD, University of Brasilia, GEORGE JAPARIDZE, Ilia State University, HENRIK JOHANNESSON, University of Gothenburg — We explore the possibility of a superconducting proximity effect in a synthetic helical liquid, formed in a quantum wire in the presence of a spatially periodic Rashba interaction [1]. The practicality and robustness of this novel scheme for producing a 1D p-wave superconductor is discussed [2].

[1] G. I. Japaridze, H. Johannesson, and M. Malard, Phys Rev B 89, 201403(R) (2014).
[2] M. Malard, G. I. Japaridze, and H. Johannesson, in preparation.

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