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**Induced p-wave Superfluidity in Imbalanced Fermi Gases in a Synthetic Gauge Field**<sup>1</sup> HERON CALDAS, Universidade Federal de Sao Joao del Rei, Sao Joao del Rei, Brazil, MUCIO CONTINENTINO, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil — We study pairing formation and the appearance of induced spin-triplet p-wave superfluidity in dilute three-dimensional imbalanced Fermi gases in the presence of a uniform non-Abelian gauge field. This gauge field generates a synthetic Rashba-type spin-orbit interaction which has remarkable consequences in the induced p-wave pairing gaps. Without the synthetic gauge field, the p-wave pairing occurs in one of the components due to the induced (second-order) interaction via an exchange of density fluctuations in the other component. We show that this p-wave superfluid gap induced by density fluctuations is greatly enhanced due to the Rashba-type spin-orbit coupling.

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Heron Caldas  
Universidade Federal de Sao Joao del Rei, Sao Joao del Rei, Brazil

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