

Abstract Submitted  
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**Anisotropic symmetric exchange as a new mechanism formultiferroicity.**<sup>1</sup> JUN-SHENG FENG, HONG-JUN XI-ANG, Fudan Univ — Discovering new magnetoelectric multiferroics is an exciting research area[1][2][3][4]. Very recently, a collinearantiferromagnetic spin order was found to induce a ferroelectric polarization in a highly symmetric cubicperovskite LaMn3Cr4O12 [5] . This spin-driven ferroelectricity could not be explained by any of the existingmultiferroic models[6][7][8][9][10][11]. Here, we put forward a new model, i.e., anisotropic symmetric exchange, to understand this phenomenon, which was confirmed by density functional calculations and tight-binding simulations. Furthermore,our perturbation analysis shows that the anisotropic symmetric exchange term can be even stronger than theconventional contributions in some 5d systems. Our multiferroic model can not only explain the experimental results, but also may open a new avenue for exploring exotic magnetoelectric coupling effects.

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