

Abstract Submitted  
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**Modulation doping of double-exchange ferromagnetism in an antiferromagnetic manganite: Theory and Synthesis**<sup>1</sup> ANAND BHATTACHARYA, T.S. SANTOS, Argonne National Laboratory, B.J. KIRBY, NIST, Gaithersburg, SANJEEV KUMAR, IFW, Dresden, S.J. MAY, Argonne National Laboratory; Drexel University, J.A. BORCHERS, B.B. MARANVILLE, NIST, Gaithersburg., J. ZARESTKY, Oak Ridge National Laboratory, S.G.E. TE VELTHUIS, Argonne National Laboratory, JEROEN VAN DEN BRINK, IFW, Dresden — In this talk we shall discuss the concepts that underlie modulation doping in the context of manganites, particularly the high bandwidth  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ , and how modulation doped structures are realized using oxide-MBE based techniques. The transport and magnetic properties of modulation doped antiferromagnetic digital superlattices of  $(\text{LaMnO}_3)_1/(\text{SrMnO}_3)_1$  will be discussed in the context of theoretical ideas about exchange interactions in these materials going back to the seminal work of de Gennes, and compared to similar structures in other parts of the  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$  phase diagram.

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