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Resonant x-ray scattering of the $Bi_{1-x}Sr_xMnO_3$ (x≤0.5) charge-ordered phases JOAQUIN GARCIA, GLORIA SUBIAS, M.C. SANCHEZ, ICMA, CSIC-Universidad de Zaragoza, Spain, PREMEK BERAN, J. L. GARCíA-MUNOZ, ICMAB, CSIC, Bellaterra Spain, M. NEVRIVA, Institute of Chemical Technology, Prague, Czech Republic — Charge-orbital ordering (CO-OO) in $Bi_{1-x}Sr_xMnO_3$ (x=0.3, 0.5) have been studied by resonant x-ray scattering (RXS) at the Mn K edge. Strong resonances were observed at the Mn K-edge for weak superstructure (h00), (0k0) and forbidden (h/200), (0k/20) reflections with h, k odd within the *ab* plane (*Ibmm* setting) in both single crystals. Additional (hk0) and (hk/20) with k odd have also been studied. The azimuth angle and polarization dependence of the resonant intensity for this set of reflections point out to a structural transition at the T_{COO} that stabilizes an checkerboard ordering of two non-equivalent Mn atoms with different local geometrical structures and a very small charge segregation for both x=0.5 and x=0.3 compounds. We can conclude that $A_{1-x}B_xMnO_3$ tends to order in a checkerboard pattern independently of the nature of the A and B atoms and for x even far from 0.5. Furthermore, the electronic states of the two non-equivalent Mn atoms are far from the ionic (+3 and +4) species.

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