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Isostructural phase transitions in GaN/ScN and InN/ScN superlattices[1] V. RANJAN, S. BIN-OMRAN, L. BELLAICHE, Physics Department, University of Arkansas, Fayetteville, AR - 72701., AHMAD ALSAAD, Department of Physical Sciences, P.O. Box 3030, Irbid, Jordan, PHYSICS DEPARTMENT, UNIVERSITY OF ARKANSAS, FAYETTEVILLE, AR - 72701 COLLABORATION, DEPARTMENT OF PHYSICAL SCIENCES, P.O. BOX 3030, IRBID, JORDAN COLLABORATION — We predict the existence of pressure-induced isostructural phase transitions (IPTs) in GaN/ScN and InN/ScN superlattices from first principles. The IPTs in these superlattices are anomalous in the sense that they are associated with trivial order parameters and generate a dramatic change in many physical quantities. Furthermore, the *order* of the phase transition is found to be dependent on the superlattice period and on the non-transition-metal cation. We also reveal the reason behind, and consequences of, these unusual dependencies and IPTs.

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