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**Inter-Layer Superconducting Pairing Induced c-axis Nodal Lines in Iron-based Superconductors** CHANDAN SETTY, Purdue University, YUEHUA SU, Yantai University, ZIQIANG WANG, Boston College, JIANGPING HU, Purdue University — A layered superconductor with a full pairing energy gap can be driven into a nodal superconducting (SC) state by inter-layer pairing when the SC state becomes more quasi-3D. We propose that this mechanism is responsible for the observed nodal behavior in a class of iron-based SCs. We show that the intra- and inter-layer pairings generally compete and the gap nodes develop on one of the hole Fermi surface pockets as they become larger in the iron-pnictides. Our results provide an explanation of the c-axis gap modulations and gap nodes observed by angle resolved photo emission spectroscopy. In addition, we predict that an anti-correlated c-axis gap modulations on the hole and electron pockets should be observable in the  $s_{\pm}$ -wave pairing state.

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