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**Phase diagram for bilayer quantum Hall effect at total filling  $\nu_T = 5$**  CHUNTAI SHI, SHIVAKUMAR JOLAD, Department of Physics, The Pennsylvania State University, NICOLAS REGNAULT, Laboratoire Pierre Aigrain, ENS, CNRS, France, JAINENDRA JAIN, Department of Physics, The Pennsylvania State University — There has been much interest in bilayer quantum Hall systems at total filling  $\nu_T = 1$ , which exhibit excitonic superfluidity at small separations and two uncoupled composite fermion Fermi seas at large separations. We evaluate the phase diagram of the bilayer quantum Hall effect at total filling  $\nu_T = 5$ , neglecting interlayer tunneling and spin fluctuations, which is expected to be a bilayer excitonic superfluid at small separations and two uncoupled 5/2 FQHE states at large separations. Based on a combination of variational and exact diagonalization (for up to 20 electrons) studies, we estimate that the transition between these states occurs at a layer separation of approximately one magnetic length, independent of the individual layer thickness. The composite fermion Fermi sea is not found to be relevant for any parameters.

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