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Investigating the Sliding Phase in Strongly and Randomly Coupled Quasi-2D Bose Gasses MATTHEW REED, ZACK SMITH, AFTAAB DEWAN, STEVE ROLSTON, UMD — Asymptotic analytical [Mohan et al 2010] functional RNG [Pekker et al 2010] and Monte Carlo [Laflorencie 2012] methods identified an anomalous Griffiths phase in the 3D XY model in the presence of disorder. A stack of cold 2D Bose gasses with random nearest neighbor inter-planar couplings should pass through two phase transitions as one increases temperature, first from a 3D superfluid to a stack of 2D superfluids, and then to a thermal state. We discuss our investigation of this intermediate phase in a stack of strongly coupled quasi-2D Rb 87 pancakes generated by a truly disordered 1D optical potential.

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