Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Effective interlayer charge transfer in an electron bilayer system VICTOR SOLOVYEV, Russian Academy of Sciences, Chernogolovka, STEFAN SCHMULT, WERNER DIETSCHE, Max-Planck-Institute for Solid State Research, Stuttgart, IGOR KUKUSHKIN, Russian Academy of Sciences, Chernogolovka — An electron bilayer system is realized in a wide GaAs quantum well. The chemical potentials of both layers can be tuned by intrinsic back and top gates. The Landau level spectrum for various charge distributions is probed by photoluminescence (PL), able to discriminate between both layers independently. The PL spectra show unambiguously how the system spontaneously deforms itself in strong magnetic fields as a consequence of energy minimization under Landau quantization and huge SAS energy gaps, reaching up to the cyclotron energy, become visible in the PL spectra [1].

[1] V.V. Solovyev, S. Schmult, W. Dietsche, I.V. Kukushkin, PRB 80, 241310, 2009.

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Date submitted: 17 Dec 2010 Electronic form version 1.4