

The absorption spectrum around $\nu = 1$: trions and spatial correlations

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We measure the absorption spectrum of a two-dimensional electron system (2DES) in a GaAs quantum well in the presence of a perpendicular magnetic field. We focus on the absorption spectrum into the lowest Landau Level around $\nu = 1$. We find that the spectrum consists of bound electron-hole complexes, trion and exciton like. We show that their oscillator strength is a powerful probe of the 2DES spatial correlations. We find that near $\nu = 1$ the 2DES ground state consists of skyrmions of small size (a few magnetic lengths).