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**Cyclotron Resonance Vanishing effect in Correlated 2D Electron Systems** ANDRE CHEBOTAREV, GALINA CHEBOTAREVA, PhysTech Lab Sunnyvale CA — “Cyclotron Resonance - Vanishing effect” (CRV) arise on magnetospectra of cyclotron resonance line (CR) as a well-defined gap that reduce to zero CR effect. CRV have been discovered due to experimental study of terahertz radiation transmission and photoresistivity magnetospectra at CR conditions in two-dimensional electron system (2DES) of GaAs/AlGaAs nanostructures with higher electron mobility at low (non-quantized Hall effect) magnetic fields. Unique experimental approach based on study of 2DES with photoresistivity and transmission techniques allows to get complementary data. One of the more significant results is that CRV-line shape (and consequently CRV effect) independent from testing THz power. We will discuss experimental study of “CR- Vanishing effect” and theoretical analysis that indicates on appearance of new fundamental correlated states of electrons at CRV conditions. To study CRV effect in detail we are working to create new model taking into account models for quantum Hall effect, magneto-plasma waves, non-linear zero-resistance states, and others that was develop for comparable experimental conditions.

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