Ac fluctuation conductivity in strongly fluctuating layered superconductors under magnetic field

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The time-dependent Ginzburg-Landau approach is used to calculate ac fluctuation conductivity in layered type-II superconductor under magnetic field. Thermal fluctuations are assumed to be strong enough to melt the Abrikosov vortex lattice created by the magnetic field into a vibrating vortex liquid and marginalize the effects of the vortex pinning by inhomogeneities. In high-T_c materials large portion of the $H-T$ diagram belongs to this phase. Layered structure of the superconductor is accounted for by means of the Lawrence-Doniach model, while the nonlinear interaction term in dynamics is treated within self-consistent Gaussian approximation. We obtain expression summing all Landau levels are applicable essentially to whole liquid phase and are compared to experimental data on high-T_c superconductor $YBa_2Cu_3O_{7-\delta}$ and $Bi_2Sr_2CaCu_2O_{8+\delta}$. Above the crossover to the "normal phase" our results agree with previously obtained.

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