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Effect of frustration on charge dynamics for a doped two-dimensional triangular Hubbard lattice TAKAMI TOHYAMA, Yukawa Institute for Theoretical Physics, Kyoto University — We examine the optical conductivity $\sigma(\omega)$ and the chemical potential μ , together with the spin correlation, in the strong-coupling limit of a hole-doped two-dimensional triangular Hubbard model near half filling by using an exact diagonalization technique [1]. In contrast to the case of a square lattice without frustration, the doping dependences of μ and the Drude weight indicate that the charge degree of freedom is weakly coupled to the spin degree of freedom. However, we find that $\sigma(\omega)$ shows strong incoherent excitations extended to a higher energy region. This implies that geometrical frustration in strongly correlated electron systems influences incoherent charge dynamics. Momentum- dependent charge dynamics is also compared with that of the square lattice.

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