

Collective Excitations in the Charge-Ordered Phase of α -(BEDT-TTF)₂I₃

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α -(BEDT-TTF)₂I₃ is a quasi-two-dimensional organic semimetal with a sharp phase transition to insulating state at $T_{CO} = 136$ K. Below the transition a charge order is present in the BEDT-TTF layers as alternating charge-rich and charge-poor horizontal stripes. [1-3] We characterized the charge response of this charge-ordered state using dc resistivity, dielectric and optical spectroscopy in different crystallographic directions within the BEDT-TTF layer. [4] In this presentation we describe in detail the complex anisotropic dielectric response in the Hz - MHz range. We argue that it reveals two different kinds of excitations: a phason-like excitation alongside a soliton-like one. Possible ramifications are discussed within recent theoretical frameworks [5].

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