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Microwave dielectric study of spin-Peierls and charge ordering transitions in $(\text{TMTTF})_2\text{PF}_6$ salts MARIO POIRIER, ALEXANDRE LANGLOIS, CLAUDE BOURBONNAIS, Universite de Sherbrooke, PASCALE FOURYLEYLEKIAN, ALEC MORADPOUR, JEAN-PAUL POUGET, Universite Paris XI Orsay — Using a microwave cavity perturbation technique at 16.5 GHz, we report a temperature and magnetic field study of the complex dielectric function along the stacking a -axis for a $(\text{TMTTF})_2\text{PF}_6$ single crystal and its deuterated analog (d_{12}). For both salts, the charge ordering transition (CO) is characterized by a decrease of the dielectric constant ε_a centered at T_{CO} (65 K and 85 K); concomitantly, the dielectric losses go through a maximum near T_{CO} and decreases rapidly below. The spin-Peierls transition (SP) is rather signalled by a rapid increase of ε_a below T_{SP} (16.5 K and 13 K) accompanied by a small peak in the losses. For the deuterated salt, we have observed important relaxation effects below 40 K that complicate the analysis of the dielectric function in the SP ground state. The temperature dependence of the SP anomalies was analysed in magnetic field values up to 18 Tesla.

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