Title:	Effect of spin reorientation on the dielectric and conductivity behavior of Ca2FeCoO5
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Abstract:	The complex dielectric and impedance properties of the magneto-dielectric brownmillerite compound Ca2FeCoO5 have been studied with the aim of understanding the different relaxation processes in the system along with the underlying mechanisms involved. The ε′ data showed frequency dependence above 150 K. The electrical impedance and modulus data showed a change of conduction mechanism from long range to short range with increasing frequency. The relaxations were characterized as non-Debye type and were found to follow thermally activated behavior with change in the activation energy in a broad temperature window coinciding with the previously reported spin reorientation transition (SRT) {120–250 K}. The grain and grain boundary contributions to the electrical impedance are de-convoluted by modeling with an equivalent electrical circuit and the resultant parameters showed modulation in the SRT region. Ac conductivity is found to exhibit two different relaxations with hopping mechanism and anomalous behavior in SRT region. This report elucidates in detail the effect of SRT on the dielectric relaxations and conduction mechanisms in Ca2FeCoO5.
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