Electronic Griffiths phase in EtMe$_3$Sb[Pd(dmit)$_2$]$_2$

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Extensive research on the Mott transition, which is the central issue in condensed matter physics, conducted over the last few decades has established a consensus that the Mott transition is of the first order at low temperatures and a crossover at high temperatures in the pressure-temperature phase diagram. Here, we found an unknown type of Mott transition, which is contrary to the consensus.$^1$ We investigated the nature of the Mott transition in the triangular-lattice Mott systems EtMe$_3$Sb[Pd(dmit)$_2$]$_2$, which has inevitable randomness in the cation layer. We performed $^{13}$C-NMR measurements and found anomalously slow dynamics of electrons never seen before. Around the Mott transition region under pressure, the electrons slowly fluctuate between a metallic state and a Mott insulating state, which is in sharp contrast to the conventional Mott transition that appears as a clear first-order transition at low temperatures. We suggest the electronic Griffith phase scenario as shown in the right of Fig. 1, that is, this unconventional Mott transition may be an analogous phenomenon to the slowly fluctuating spin phase, or Griffiths phase, realized in Ising spin systems with disordered lattices as shown in the left of Fig. 1.

![Figure 1](image-url)

**Figure 1** The schematic phase diagrams of the Griffiths phase and electronic Griffiths phase.