1154-05-1654 **Calum MacRury*** (cmacrury@cs.toronto.edu), **Tomáš Masařík** (tarken@kam.mff.cuni.cz), **Xavier Pérez-Giménez** (xperez@unl.edu) and **Leilani Pai** (lpai@huskers.unl.edu). *Lower Bounds on Discrepancy of Random Hypergraphs.* Preliminary report.

Motivated by the Beck-Fiala conjecture, we study the discrepancy problem in two random hypergraph models, each of which has n vertices and m edges. In the first model, $\mathcal{G}_1$ is constructed by fixing a parameter p and allowing its vertices to join each of its m edges independently with probability p. In the parameter range for which $pn \to \infty$ and $pm \to \infty$, we show that $\mathcal{G}_1$ has discrepancy $\Omega(2^{-n/m}\sqrt{np})$ with high probability.

In the second model, d is fixed and each vertex of $\mathcal{G}_2$ independently joins exactly d edges uniformly at random. We explore a number of coupling techniques relating $\mathcal{G}_1$ to $\mathcal{G}_2$ for the special case when p is set to d/m. Using an argument based around these techniques, we explore how to extend the lower bound of $\Omega(2^{-n/m}\sqrt{nd/m})$ to $\mathcal{G}_2$ for the parameter range when $d \to \infty$ and $dn/m \to \infty$. (Received September 16, 2019)