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## Constraints on Supersymmetric Hidden Sectors

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### **Abstract:**

Light GeV-scale hidden sectors can offer distinctive collider signals, light dark matter compatible with recent direct detection hints, and are theoretically well-motivated by GUTs. A popular portal between the visible and hidden sector is kinetic mixing of hypercharge and a new abelian vector field. In supersymmetric theories, this automatically introduces mass mixing of the MSSM and hidden sector Higgses. This mixing opens up new decay modes for the hidden states to the Standard Model, which are generically too slow for particle accelerators but can be relevant to other low energy constraints on such models. We examine these constraints within the context of a minimal supersymmetric hidden sector that has broad phenomenology, and discuss how the mass mixing changes the allowed parameter space.

**Authors:** Dr SPRAY, Andrew (TRIUMF); Prof. MORRISSEY, David (TRIUMF)

**Presenter:** Dr SPRAY, Andrew (TRIUMF)

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