Superconductors of the transition metal dichalcogenide (TMD) family have seen a revival of interest subsequent to developments in device fabrication by mechanical exfoliation. Recent studies\(^1\) show that at the ultrathin limit, NbSe\(_2\) and similar TMDs can sustain superconductivity at very high in-plane magnetic fields, well beyond the Pauli limit\(^2\). This apparent stability is associated with Ising spin-orbit coupling, which keeps spins oriented out of the sample plane, thereby providing strong protection against depairing. In my talk, I will report our recent spectroscopy measurements of NbSe\(_2\) using vdW tunnel devices\(^3\). Our devices are fabricated by placing insulating barriers on top of exfoliated NbSe\(_2\) using the mechanical transfer technique. The resulting tunnel junctions exhibit extremely stable currents, and are characterized by a hard gap. At mili-Kelvin temperatures, the tunneling spectra exhibit a well-resolved separation into a two-gap structure. We show that by applying in-plane magnetic fields to bulk devices (20-50 nm thick), it is possible to distinguish between the kinematics of quasiparticles which belong to different gaps. When probing ultra-thin devices (3-4 layers), we find the larger energy gap to be almost fully protected to depairing, an effect consistent with transport studies. Finally, I will discuss the implications of our technique to vortex-bound state spectroscopy.

3. Dvir et al., *arxiv:1711.09615*