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**Talk Title:** Superfluid vortex dynamics on curved surfaces

**Abstract:** Superfluid vortex dynamics on curved surfaces can differ significantly from that on a flat plane because of topological or curvature effects. For example, quantization of circulation (arising from a single-valued condensate wave function) requires that a single quantized vortex on an unbounded cylinder move with a quantized angular velocity, either to the left or right. For compact surfaces such as a sphere or a torus, topology requires that the total vorticity vanish. On a sphere, a vortex dipole follows a simple trajectory reflecting the constant Gaussian curvature, but the corresponding situation on a torus is more complicated because the Gaussian curvature is nonuniform.