1147-37-395   **Tomoki Ohsawa*** (`tomoki@utdallas.edu`), 800 W Campbell Rd, Richardson, TX 75080. *The shape dynamics of N point vortices on the sphere.*

We present a Hamiltonian formulation of the dynamics of the "shape" of N point vortices on the sphere: For example, if $N = 3$, it is the dynamics of the shape of the triangle formed by three point vortices, regardless of the position and orientation of the triangle on the sphere. Specifically, we first lift the dynamics of N point vortices from the two-sphere $\mathbb{S}^2$ to $\mathbb{C}^2$, and then perform symplectic and Poisson reductions by symmetries to find a Poisson structure on the space of parameters for the shape of the point vortices. (Received January 22, 2019)