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Spin-Up and Spin-Down in a Half Cone MICHAEL PATTERSON, University of Bath, LIGANG LI, KEKE ZANG, University of Exeter, RICH KERSWELL, University of Bristol — The spin-up and spin-down flow responses in a rapidly-rotating, fluid-filled, closed half-cone are studied both numerically and experimentally. This unusual set up is of interest because it represents a pathological case for the classical linear theory of Greenspan & Howard (1963) since there are no closed geostrophic contours nor a denumerable set of inertial waves. Yet, the flows observed are surprisingly simple except when the fluid is appreciably spun-down which induces boundary layer separation and complicated spatiotemporal behaviour. Most notably, the linear regime of small increase or decrease in the rotational speed exhibits the familiar "spin-up" Ekman boundary layer timescale of $O(E^{-1/2})$ (where E is the Ekman number) for adjustment.

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