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**Andrei Ludu\*** (ludua@erau.edu), ERAU, COAS-301.11, 600 Clyde Morris Blvd., Daytona Beach, FL 32114. *Universality of Hollow Patterns in Rotating Fluids.*

Rotating hollow polygonal patterns ranging from convex or concave regular polygons (triangles to heptagons) to higher frequency periodic waves were studied. During the rapid evaporation of the liquid various stable modes (number of edges of polygons) take over in the process. The model is based on shallow water theory and predicts the existence of sharp rotational polygonal waves with peakon solutions. PIV measurements showed that the inner rotating polygons are generated by energy transfer waves (apparent shape rotation), and do not involve matter transport. Similar hollow polygonal patterns are noticed in eye of hurricanes, in fast rotational bodies of water, in Saturn's hexagon, and in some plasma systems. Consequently, a tentative universality model for these rotational effects is presented. (Received January 18, 2017)