1135-35-2836 **Emel Bolat*** (emel.bolat@mavs.uta.edu), 1624 Ridge Haven Dr. #713, Arlington, TX 76011, and **Yue Liu** (yliu@uta.edu), The University of Texas at Arlington, Department of Mathematics Box 19408, 1225 West Mitchell, Arlington, TX 76019. *Local Well-Posedness and Blow-up Criteria for the Rotational b-family Equation.* Preliminary report.

In this study, a mathematical model of long-crested water waves propagating mainly in one direction with the effect of Earth's rotation is derived by following the formal asymptotic procedures. This model equation is corresponding to the Camassa-Holm (b=2) and Degasperis-Procesi (b=3) approximation of the two-dimensional incompressible and irrotational Euler equations. This new model equation is called the rotational b-family equation. First of all, we establish the local well-posedness of the rotational b-family equation. Then we determine the consequences of the Coriolis force caused by the Earth rotation and nonlocal higher nonlinearities on blow up criteria. (Received September 26, 2017)