

1163-F1-1477 **Genesis J. Islas*** (gjislas@asu.edu). *Node generation for radial basis function partition of unity method for computations on surfaces*. Preliminary report.

Radial Basis Functions (RBFs) are a popular meshfree method for solving partial differential equations. RBF approximations are highly accurate and can exhibit exponential convergence. A partition of unity method can be used to improve computational cost and to prevent excessively large condition numbers. The domain decomposition also makes the problem highly parallelizable. In this talk, we present a node generating algorithm for the radial basis function partition of unity method on surfaces. The stability and convergence analysis of the associated PDE solver will be presented. (Received September 15, 2020)