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Yuhua Li, Fuyi Li and Junping Shi* (jxshix@wm.edu), Department of Mathematics, College of William and Mary, Williamsburg, VA 23187. *Ground States of Nonlinear Schrödinger Equation on Star Metric Graphs.*

The existence and nonexistence of the ground state to Nonlinear Schrödinger equation on several types of metric graphs are considered. In particular, for some star graphs with only one central vertex, the existence of ground state solution or positive solutions are shown. It is shown that the structure of the set of positive solution is quite different from the one for corresponding bounded n -dimensional domain. The proofs are based on variational methods, rearrangement arguments, energy estimates and phase plane analysis. (Received September 05, 2016)