

1110-35-315

Mengxia Dong* (eu8879@wayne.edu) and **Guozhen Lu**. *A general sharp weight Moser-Trudinger inequality.*

In this article, our main purpose is to establish the weighted Moser-Trudinger type inequality with its sharp constant and consider the existence of a maximizer associated with the weighted Moser-Trudinger type inequality. Recently Ishiwata, Nakamura and Wadade have shown the singular Moser-Trudinger type inequality for all radially symmetric functions. We improve this result by showing such weighted inequalities also hold for arbitrary functions which are not necessarily radially symmetric. Moreover, we also prove a more general inequality and establish the existence of maximizer could be attained. This is joint work with Guozhen Lu. (Received February 23, 2015)