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Hanh Nguyen* (hanhnguyenvan@gmail.com), University of Alabama, Tuscaloosa, AL. *The Boundedness of Multilinear Fourier Multipliers On Hardy, Weighted Hardy and Variable Exponent Hardy Spaces.*

In this talk, we will summarize the boundedness of the multilinear Fourier multipliers on Hardy spaces, on weighted Hardy spaces, and on variable exponent Hardy spaces. We will present the methods for establishing the boundedness of the multilinear Fourier multipliers in these spaces. Rubio de Francia extrapolation is used to bootstrap our results from weighted Hardy spaces to variable exponent Hardy space. Some additional tools are developed in the quest for the study of these multipliers that are useful for other operators such as multi-linear Calderon-Zygmund operators or multi-linear fractional singular integrals. (Received September 21, 2021)