

# Variable weak Hardy spaces and their applications

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In this talk, we will introduce a theory of variable weak Hardy spaces, including their equivalent characterizations in terms of maximal functions, atoms and Littlewood-Paley square functions. As applications, we prove the boundedness of some Calderón-Zygmund operators from variable Hardy spaces to variable weak Hardy spaces and a real interpolation theorem between variable Hardy spaces and  $L^\infty$  spaces.