1126-42-118   **Michael Carr Northington V*** (`mcnv3@gatech.edu`), **Shahaf Nitzan** and **Alexander Powell**. *Sharp Balian-Low Type Theorems.* Preliminary report.

When shift-invariant spaces and Gabor systems are used as approximation spaces, it is advantageous for the generators of such spaces to be localized and for the spaces to be representative of a large class of functions. However, the celebrated Balian-Low Theorem shows that if a Gabor system generated by a function forms a Riesz basis for $L^2(\mathbb{R})$, then the function must be poorly localized in either time or frequency. In this talk, I will discuss several sharp results similar to the Balian-Low Theorem which hold either for Gabor systems or shift-invariant spaces, and which follow from a more general theorem placing constraints on unbounded Fourier multipliers. (Received January 08, 2017)