1056-42-1145Alexander Powell* (alexander.m.powell@vanderbilt.edu), Department of Mathematics,
Vanderbilt University, Nashville, TN 37240, and Christopher Heil (heil@math.gatech.edu),
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Gabor systems on a lattice.

The Balian-Low Theorem (BLT) is a strong form of the uncertainty principle for Gabor systems that form orthonormal bases or Riesz bases for $L^2(R)$. We investigate the Balian-Low theorem in the settings of (1) exact systems, and (2) Schauder bases. We prove a new nonsymmetrically weighted Balian-Low theorem for Gabor systems that are complete and minimal. We also discuss how Gabor Schauder bases relate to the Balian-Low theorem, and characterize a class of Gabor Schauder bases in terms of the Zak transform and product A_2 weights. (Received September 21, 2009)