

Abstract Submitted  
for the 4CF15 Meeting of  
The American Physical Society

**Spatially Resolved Spectroscopy of Semiconductor Nanostructure Disorder** MATTHEW DAY, Department of Physics, University of Colorado, Boulder CO 80309, USA, RILEY SECHRIST, Department of Physics, University of Michigan, Ann Arbor, MI 48109, USA, ROHAN SINGH, CHRIS SMALLWOOD, JILA, University of Colorado National Institute of Standards and Technology, Boulder CO 80309, USA, STEVEN CUNDIFF, Department of Physics, University of Michigan, Ann Arbor, MI 48109, USA — Manufacturing processes unintentionally introduce inhomogeneities, typically on the order of a few monolayers, in the width of semiconductor quantum wells. These fluctuations, known as disorder, modulate optical transition energies of excitons confined within the quantum well layer and are the main cause of inhomogeneous spectral broadening. It is therefore imperative to quantify this disorder so its effect on exciton confinement potentials can be accounted for in ultrafast spectroscopic studies on semiconductor quantum wells. We present the use of micro-photoluminescence spectroscopy to accomplish this goal, and preliminary results of our study.

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Date submitted: 11 Sep 2015

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