Biexcitonic bound and continuum states of homogeneously and inhomogeneously broadened exciton resonances - DTU Orbit (04/02/2019)

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We investigate the influence of excitonic localization on the corresponding biexcitonic states in GaAs quantum wells by spectrally resolved four-wave mixing. With increasing localization, the biexciton binding energy increases, while the biexciton continuum shifts to higher energies. The localization leads to an inhomogeneous broadening of the biexciton binding energy and the biexciton continuum edge. Simultaneously, the oscillator strength of the biexciton continuum-edge is reduced. This is interpreted as a result of the different localization of biexcitonic and excitonic states by the random disorder potential.

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