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Electron states and electron Raman scattering in semiconductor double cylindrical quantum well wire. MANUEL MUNGUA RODRGUEZ, RICARDO BETANCOURT RIERA, REN BETANCOURT RIERA, RAL RIERA AROCHE, None, RODRIGO ROSAS BURGOS, SMF — The differential cross section for an electron Raman scattering process in a semiconductor GaAs/AlGaAs double quantum well wire are calculated, and expressions for the electronic states are presented. The system is modeled by considering T=0K and also a single parabolic conduction band, which is split into a subbands system due to the confinement in the wire. The gain and differential cross-section for an electron Raman scattering process are obtained. Also, the emission spectra for several scattering configurations are discussed, and the interpretation of the singularities found in the spectra are given. The electron Raman scattering studied here can be used to provide direct information about the efficiency of the lasers systems.

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