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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- The galaxy formation model -- On the impact of empirical and theoretical star formation laws on galaxy formation -- Cosmic evolution of the atomic and molecular gas content of galaxies and scaling relations -- Predictions for the CO emission of galaxies from a coupled simulation of galaxy formation and photon dominated regions -- A dynamical model of supernova feedback: gas outflows from the interstellar medium -- Conclusions -- Non-exponential star formation laws and their application to a numerical model -- The CO line and IR luminosity -- Radial profiles of the stellar and dark matter components -- The recycle fraction and yield of different stellar populations.
Sommario/riassunto	This thesis addresses two of the central processes which underpin the formation of galaxies: the formation of stars and the injection of energy into the interstellar medium from supernovae, called feedback. In her work Claudia Lagos has completely overhauled the treatment of these processes in simulations of galaxy formation. Her thesis makes two major breakthroughs, and represents the first major steps forward in these areas in more than a decade. Her work has enabled, for the first time, predictions to be made which can be compared against new observations which probe the neutral gas content of galaxies, opening up a completely novel way to constrain the models. The treatment of

feedback from supernovae, and how this removes material from the interstellar medium, is also likely to have a lasting impact on the field. Claudia Lagos Ph.D. thesis was nominated by the Institute for Computational Cosmology at Durham University as an outstanding Ph. D. thesis 2012.