

Anelastic models for dynamo action

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The anelastic and Boussinesq approximations are simplifications of the system of equations governing buoyantly driven flows. The Boussinesq approximation performs well in modeling convection in laboratory experiments, but it is however unsatisfactory for large stratified systems like stars or planetary cores, the lower part of which is compressed by the overlying material. We will present a summary of the different versions of these convective approximations, and question both their derivation and their numerical implementation.