A statistical model for potential natural vegetation, application to Mediterranean climate

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A number of vegetation dynamical models already exist, but they are affected by uncertainties related to the high degree of parameterization of the involved processes. Here, as an alternative, a diagnostic model of potential natural vegetation, based on cluster analysis of high resolution datasets of observed vegetation distribution and climate, is proposed. The model reliability is discussed and it is showns how it can be applied for reconstructing spontaneous vegetation distribution in areas where it has been replaced because of anthropic action. Further, it is applied to climate model scenario in order to identify the changes of vegetation in critical areas as consequence of projected climate change. The model is coupled to a regional climate model in order to take into account the feedback of dynamical vegetation to the atmosphere in the Mediterranean Area.