

Abstract Submitted
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The shape of fair weather clouds YONG WANG, GIOVANNI ZOCCHI, UCLA — It is well known that cumulus clouds are formed under the influence of thermals - convection currents which channel moist air upwards. Here we introduce a simple physical model which accounts for the shape of cumulus clouds exclusively in terms of thermal plumes or thermals. The plumes are explicitly represented by a simple potential flow generated by singularities (sources and sinks) and with their motion create a flow field supporting the cloud. We discuss the parametrization of this model, which attempts a description of the cloud starting from the coherent structures in the flow. We use the model to explore transitions which occur in the dynamical state of the cloud.

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