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Turbulent flow inside a solar concentrator receiver MANUEL RAMIREZ, EDUARDO RAMOS, Universidad Nacional Autonoma de Mexico — A solar concentrator receiver is a heat exchanger designed to absorb a beam of radiant heat coming from a field of heliostats. Inside the device, a slow forced flow generated by an external pressure gradient is present, together with a natural convective and a turbulent flow produced by the large temperature gradients due to intense heating. We present a model of this device based on the numerical solution of the mass, momentum and energy conservation equations. We consider heating conditions that lead to turbulence convective flow. For this season, a large eddy simulation model is incorporated. The results are potentially useful for the design of solar concentrator receivers.

Manuel Ramirez
Universidad Nacional Autonoma de Mexico

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