A 3D symmetry-preserving simulation of a Concentrated PhotoVoltaic Thermal (CPVT) Solar Collector

Authors:
Daniel Santos Serrano,
Joaquim Rigola,
Jesus Castro,
Frances Xavier Trias

Keywords: symmetry-preserving, FVM, CPVT

Abstract body

In this work, a general collocated and unconditionally stable framework on unstructured meshes for solving Conjugate Heat Transfer (CHT) problems is presented by means of preserving the underlying symmetries of the continuous differential operators, thus not introducing uncontrolled artificial numerical dissipation to our system. Then, this framework is applied to solve a Concentrated PhotoVoltaic Thermal (CPVT) Solar Collector, including the Radiative Transfer Equations (RTE).