

The heat and mass transfer problem in a trapezoidal cavity is treated in this article. The lower part of the cavity is heated and the top inclined part is cooled. Phenomenological equations are solved using the alternating direction implicit (ADI) method combined with a fourth-order compact Hermitian method. The results are compared to those obtained experimentally and numerically by other authors in the triangular and trapezoidal cavity cases. The thermoconvective instabilities obtained are similar to those obtained in rectangular cavities. The influence of geometric parameters, global solicitations, and Lewis numbers on fluid flow configurations and on heat and mass transfer ratios is also studied