Comparison of two different modelling tools

In this paper a test case is solved using two different modelling tools, Engineering Equation Solver (EES) and WinDali, in order to compare the tools. The system of equations solved, is a static model of an evaporator used for refrigeration. The evaporator consists of two parallel channels, and it is investigated how a non-uniform airflow influences the refrigerant mass flow rate distribution and the total cooling capacity of the heat exchanger. It is shown that the cooling capacity decreases significantly with increasing maldistribution of the airflow. Comparing the two simulation tools it is found that the solutions differ only slightly depending on which software is used for solving due to differences in the thermophysical property functions. Considering the solution time, WinDali solves the equations more than 100 times faster than EES.