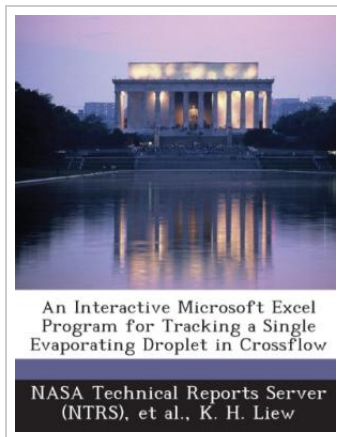




An Interactive Microsoft Excel Program for Tracking a Single Evaporating Droplet in Crossflow

By K H Liew

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Droplet interaction with a high temperature gaseous crossflow is important because of its wide application in systems involving two phase mixing such as in combustion requiring quick mixing of fuel and air with the reduction of pollutants and for jet mixing in the dilution zone of combustors. Therefore, the focus of this work is to investigate dispersion of a two-dimensional atomized and evaporating spray jet into a two-dimensional crossflow. An interactive Microsoft Excel program for tracking a single droplet in crossflow that has previously been developed will be modified to include droplet evaporation computation. In addition to the high velocity airflow, the injected droplets are also subjected to combustor temperature and pressure that affect their motion in the flow field. Six ordinary differential equations are then solved by 4th-order Runge-Kutta method using Microsoft Excel software. Microsoft Visual Basic programming and Microsoft Excel macrocode are used to produce the data and plot graphs describing the droplet's motion in the flow field. This program computes and plots the data sequentially without forcing the user to open other types of...



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