عنوان مقاله:

A FULL MATHEMATICAL MODEL FOR STUDYING OF AN IMPINGING SPRAY JET UNDER QUIESCENT CONDITONS

محل انتشار:

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خلاصه مقاله:

The paper presents a complete mathematical model for isothermal free and wall jet in quiescent flow fields. This model is suitable for prediction of the spray jet penetration as a free or wall jet. Parametric studyng of the model shows that the computed results are important in prediction the effects of the key parameters such as fuel injection pressure, ambient air pressure and ambient air density on the jet development. In this model with assumption of a velocity distribution, which changes from unifirm profile at the nozzle exit to an assumed parabolic from at distance "x" from the pole, the developing jet envelop can be determined by using the continuity, and momentum equations. Finally, with simplified geometry of the combined free jet with its associated wall jet in a deflection region, the wall jet development can be obtained. Comparison of the present model with other theoretical or experimental results shows a staisfactory agreement between them.

کلمات کلیدی:
Diesel, free jet, wall jet

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