

عنوان مقاله:

Air Entrainment in High Pressure Multihole Gasoline Direct Injection Sprays

محل انتشار:

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خلاصه مقاله:

Experimental and numerical investigation of multihole gasoline direct injection (GDI) sprays at high injection pressure and temperature are performed. The primary objective of this study is to analyse the role of gas entrainment and spray plume interactions on the global spray parameters like spray tip penetration, spray angles and atomization. Three-hole 90° spray cone angle and six-hole 60° spray cone angle injectors are used for current work to examine the effect of the geometry of the injector on the spray interactions. The numerical results from Reynolds Average Navier Stokes (RANS) simulations show a reasonable comparison to experiments. The simulations provide further insight to the gas entrainment process highlights the fact that a stagnation plane is formed inside the spray cone which basically governs the semi collapse of spray that in turn affects the spray direction and cone angle.

کلمات کلیدی:

Multihole injector, GDI sprays, Gas entrainment, RANS, Spray collapse

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