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Numerical simulation of turbulent burning velocity of CH_4/H_2/air flame using LES/FGM approach MASAYA MUTO, HIROAKI NAGAI, RYOICHI KUROSE, Kyoto University, FUMITERU AKAMATSU, Osaka University, KEI INOUE, Mitsubishi Heavy Industries, Ltd., KENJI MIYAMOTO, Mitsubishi Hitachi Power Systems, Ltd. — The turbulent burning velocity, s_T, of hydrogen/methane/air mixture is numerically investigated by large-eddy simulation (LES) with flamelet generated manifold (FGM) method of turbulent jet flow. Volume ratio of the hydrogen/methane in the mixture, α is varied from 0 to 0.6 for the ambient pressure range of P =0.1-0.9 MPa. Equivalence ratio of the mixture is fixed to be unity. The results show that the ratio of s_T to laminar burning velocity s_L, s_T/s_L increases with increasing α and P This is considered to be due to the facts that s_L decreases with increasing P, and that the flame thickness decreases with increasing α and P, which causes to increase the surface area of flame sheet.

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