**A revised NOMANI model for NO prediction using improved mechanism indicator** DAEHYUN HAN, SEONGWON KANG[1], Sogang Univ — The main objective of this study is to predict NO emission efficiently and accurately using a revised NOMANI model in laminar and turbulent flames. Although the prompt and thermal NO mechanisms have very different reaction time scales, many practical combustion models assume fast chemistry and have a limitation in predicting formation of thermal NO. The NOMANI model by Pecquery et al. (2014) is based on the flamelet-progress variable approach and suggests a new tabulation with NO composition as an axis instead of the progress variable. In the present study, various mechanism indicators other than the original progress variable are analyzed to represent local mechanism of NO production more accurately. In order to develop improved weight parameters for non-premixed flames and post-flame regions, we consider the species involved in different NO formation mechanisms. We analyze the proposed approach using DNS of laminar premixed and non-premixed flames. As validation cases, LES studies are performed for turbulent flames, which leads to improved results.

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Date submitted: 31 Jul 2017                    Electronic form version 1.4