

## عنوان مقاله:

Determination of governing mode (knocking, normal or misfire) on HCCI engine's cycle using Matter Element Extension theory

## محل انتشار:

یازدهمین همایش بین المللی موتورهای درونسوز و نفت (سال: 1398)

تعداد صفحات اصل مقاله: 10

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## خلاصه مقاله:

Nowadays, researchers tend to simulate and model the studied phenomena to reduce the calculation time and cost. Matter-element extension model is a useful method that can be used to evaluate a wide range of data belongs to different subjects. In the present study, this model is used to diagnose different engine's performance modes including misfire, normal,.To achieve this purpose, a set of performance and emission parameters acquired for a multi zonal model are chosen as input data to the model. Statistical analysis is done on a set of experimental data. First, ANOVA (analysis of variance) is used to determine parameters significant level. Then the proportional weights are given for the chosen parameters respect to their importance. To do this, linear regression analysis is used for determination of weights. The output of matter-element extension model for each test condition has three values that range from -1 to 1.  $\gamma_i$  is representing of governing mode on engine's cycle. Results show that when each of  $\gamma_i$  that lease to 1, that mode is the governing mode of cycle. The other remaining two values are meaningful. Results show that outputs of this mode have good conformity with corresponding experimental data and it can be reliable model in determination of engine cycle.

## کلمات کلیدی:

HCCI, Knock, misfire, extension theory

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1015470>

