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ASSESSMENT OF OSCULATING VALUE METHOD BASED ON ENTROPY WEIGHT TO TRANSPORTATION ENERGY CONSERVATION AND EMISSION REDUCTION

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Abstract

To assess energy conservation and emission reduction effect on traffic and transportation at macro level more scientifically, the evaluation system based on the improved osculating value method for transportation is established. Information entropy weight is introduced to the traditional osculating value method and the numerical matrix normalization process in the osculating value method is simplified. The pollutant emission and the energy consumption is defined as negative index, and the capacity contribution and environmental governance as positive index. Based on the data from 2009 to 2014 of China's traffic and transportation industry, each index is calculated by the improved osculating value method. The result shows that the energy conservation and the emission reduction effect achieved the best in 2010 and the worst in 2014, the indicators weights vary from 0.002 to 0.332776. The improved osculating value method inherits the advantage of the traditional method that the subjective parameters do not need to be determined. In the improved model, the practical cases show that the sample differences are enlarged by the entropy weight comparing with the traditional osculating value method, the evaluation system is operable, and the evaluation results are objective and reliable.

Keywords: emission reduction, energy conservation, entropy weight, osculating value method

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