

عنوان مقاله:

Prediction of Hole Temperature During The Drilling Process Using Artificial Neural Networks

محل انتشار:

همایش ملی آشنایی با فناوریهای روز در زمینه مهندسی مکانیک (سال: 1389)

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خلاصه مقاله:

Information of the drilling hole temperature during the process, is important in drilling quality and tools life aspects. About these, various studies, including experimental, numerical and analytical methods are done. In the present study drilling hole temperature is determined by using artificial neural networks according to certain points' temperature of the work piece and two parameters, drill diameter and ambient temperature. In the present work, by using the CFDsimulations, temperature in nods of the work piece specified in quasi-steady conditions. Results obtained from CFD are used for training and testing the ANN approach. Using reverse engineering and setting the desired points temperature, the drill diameter and ambient temperature as input data to the network, drilling hole temperature that determined by neural network is presented as output data. Data obtained in different parts is given. The desired points temperature for different drill bit diameters obtained experimentally and by extrapolation method the drilling point temperature is obtained and a comparison is performed among the soft programming ANN, CFD results and experimental data and it is observed that ANN soft programming code can be used more efficiently to determine hole .temperature in a drilling process and comparison has been discussed

کلمات کلیدی:

Drilling; Hole temperature; Artificial neural networks

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