

Pantograph-Catenary Contact Force: Features Evaluation for Catenary Diagnostics

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Abstract : The Prognostics and Health Management is a system engineering discipline which provides solutions and models to the implantation of a predictive maintenance. The approach is based on extracting useful information from monitoring data to assess the "health" state of an industrial equipment or an asset. In this paper, we examine multiple extracted features from Pantograph-Catenary contact force in order to select the most relevant ones to achieve a diagnostics function. The feature extraction methodology is based on simulation data generated thanks to a Pantograph-Catenary simulation software called INPAC and measurement data. The feature extraction method is based on both statistical and signal processing analyses. The feature selection method is based on statistical criteria.

Keywords : catenary/pantograph interaction, diagnostics, Prognostics and Health Management (PHM), quality of current collection

Conference Title : ICRE 2017 : International Conference on Railway Engineering

Conference Location : London, United Kingdom

Conference Dates : September 21-22, 2017