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5P06 - Study on the restrike characteristics of metal electrical explosion

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Abstract: The burst current will appear a brief pause phenomenon during the electrical explosion process, which is known as restrike, restricting the sedimentary energy of metal conductors in the exploding progess, changing the energy transfer process, thus affecting the propagation of detonation products. In order to study the factors affecting the restrike characteristics of electric explosion, a segmented control resistivity-specific action model based on current density is established in this paper. The effects of metal conductor size, materical and loading characteristics on second discharge were studied by numerical simulation and experiment , and the influence law of different factors was obtained. The results show that the current dwell time and the peak value of second-strike current are closely related to the charging voltage, length and meterial of metal conductor. The research results lay a foundation for the further research and application of metal electria explosion.

Keywords: Electrical exploding;restrike;Current pause;Resistivity;Specific action

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