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# Evaluating the Flicker caused by Electric Arc Furnace through the Multi-scale Entropy MSE Algorithm SampEn

**Aouabdi Salim, BENDJAMA Hocine**

**Abstract :** This paper presents a new method to evaluate the Arc voltage quality in electric arc furnace (EAF). It has been shown that is possible to allow the representation of nonlinear dynamics and coupling effects between different waves for irregularity of electrical signals issued by electrical components through multi-scale entropy algorithm SampEn. This work shows the behavior of the feature extraction with SampEn when it's used to evaluate the signals that deviate the arc voltage in (EAF). Flicker effect with voltage imbalances are analyzed by means of the SampEn concept.

**Keywords :** Entropy, Arc voltage signals quality, Flicker effect, voltage imbalance