

Generalised spectral norms – a new method for condition monitoring

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Abstract

In condition monitoring detecting changes in measured signals is often desired. Another crucial piece of information is the frequency which shows the change. In industrial applications today, it is quite common to monitor some feature e.g. RMS value, and for information about the frequency content the frequency spectrum is visually analysed. The RMS is in fact a special case of the l_p norms, which have shown to be a quite useful way to monitor changes in signals. While effective for detecting changes, the l_p norms calculated from the time domain signal fail to answer the question in which frequency range the changes are. Calculating spectral norms is a way to perform both of these tasks simultaneously and effectively.

Keywords: generalised norm, l_p norm, spectral norm, MIT measurement index

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