

In this paper, we propose to perform early fault diagnosis using high-resolution spectral analysis of the stator current to detect bearing faults in electrical induction machine. While most research works focus on mechanical vibration analysis, the originality of our work relies on the use of high-resolution methods to detect modulations in the stator current. We present the results obtained for real data to detect inner and outer raceway bearing defects made artificially as well as bearing defects obtained through on-site ageing. The obtained results show that the proposed method yields better detection than classical spectrum analysis