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Paper: Defect Detection in Arc-Welding Processes by Means of the Line-to-Continnuum Method and Feature Selection
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Abstracts:

Plasma optical spectroscopy is widely employed in on-line welding diagnostics. The determination of the plasma electron temperature, which is typically selected as the output monitoring parameter, implies the identification of the atomic emission lines. As a consequence, additional processing stages are required with a direct impact on the real time performance of the technique. The line-to-continuum method is a feasible alternative spectroscopic approach and it is particularly interesting in terms of its computational efficiency. However, the monitoring signal highly depends on the chosen emission line. In this paper, a feature selection methodology is proposed to solve the uncertainty regarding the selection of the optimum spectral band, which allows the employment of the line-tocontinuum method for on-line welding diagnostics. Field test results have been conducted to demonstrate the feasibility of the solution.