# Quality control in cloth production: a new system for real-time defect detection

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## ABTRACT

Real time defect detection on fine cloth is an urgent problem to solve: detecting a long and serious defect on a roll, as soon as it is produced, can reduce damages to the roll, and the consequent decrement of price. The paper describes the work performed at the Department of Energy Engineering `Sergio Stecco' of the University of Florence, in collaboration with well-known high quality wool cloth manufacturers (Marzotto) and machine builders (Sulzer, Benninger). The main goal has been to obtain a new and innovative production line, endowed with a system (based on image processing techniques) for detecting defects in real- time and thus for controlling the production process. The system is based on image processing techniques with a special attention to the real-time constraints. An architecture separating an on-line defect detection and an off-line classification has been proposed. An intelligent optical head, assembled on the loom, acquires images and detects the defects in real-time. A server has the offline task to classify each defect detected by the head. The system has been tested on a real loom, with good results in terms of reliability, false alarms and stability.