



Contribution ID: 83

Type: **not specified**

Spectral Methods for SPC of 3-D Geometrical Data

Monday, 11 September 2023 13:50 (20 minutes)

We present a summary of recently developed methods for the Statistical Process Control of 3-dimensional data acquired by a non-contact sensor in the form of a mesh. The methods have the property of not requiring ambient coordinate information, and use only the intrinsic coordinates of the points on the meshes, hence not needing the preliminary registration or alignment of the parts. Intrinsic spectral SPC methods have been developed for both Phase I (or startup phase) and Phase II (or on-line control). In addition, we review recently developed spectral methods for the localization of defects on the surface of a part deemed out of control that do not require registration of the part and nominal geometries.

Keywords

Statistical Process Control, 3-dimensional data, Geometrical data, Inspection

Classification

Mainly methodology

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Session Classification: CONTRIBUTED Quality 1

Track Classification: Quality