

Incorporating skew into RMS surface roughness probability distribution

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ABSTRACT

The standard treatment of RMS surface roughness data is the application of a Gaussian probability distribution. This handling of surface roughness ignores the skew present in the surface and overestimates the most probable RMS of the surface, the mode. Using experimental data we confirm the Gaussian distribution overestimates the mode and application of an asymmetric distribution provides a better fit. Implementing the proposed asymmetric distribution into the optical manufacturing process would reduce the polishing time required to meet surface roughness specifications.