

## **On axis fringe projection: A new method for shape measurement**

Sicardi-Segade Analía, Estrada, J. C., Martinez-Garcia Amalia, Garnica Guillermo.

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### **Abstract**

The traditional fringe projection technique requires a non-zero angle between projection and observation directions to have sensitivity in the z direction. In this work, a new method for shape measurement using fringe projection is presented. In our case, the angle between projection and observation directions is zero, but the system presents sensitivity due to divergent projection which changes the fringes frequency in each one of the normal planes to z-axis. The accuracy of the new method proposed here is validated with real measurements obtained with a coordinate measuring machine (CMM) and compared with the standard fringe projection technique. Finally, we discuss the advantages of the new method.