

CALIBRATION METHOD AND APPARATUS FOR EXTERNAL PARAMETERS OF LINEAR PROFILER AND ELECTRONIC DEVICE

5

Abstract

The embodiments of the present application provide a calibration method and apparatus for extrinsic parameters of a linear profiler, and an electronic device, which are applied to the technical field of measurements. The method includes acquiring multiple frames of contour point clouds collected by the linear profiler for a calibration block during a movement of the calibration block along with a measurement platform; performing point cloud segmentation on each contour point cloud to obtain surface point clouds belonging to different measurement surfaces; for each surface point cloud, establishing a constraint relationship of the surface point cloud based on feature points in the surface point cloud and a surface feature of a measurement surface to which the surface point cloud belongs, constructing an objective optimization function for an estimated conversion relationship based on the estimated conversion relationship and constraint relationships of surface point clouds, optimizing the objective optimization function to obtain optimized conversion parameters between a linear profiler coordinate system and a measurement platform coordinate system as extrinsic parameters between the linear profiler and the measurement platform. Through the present solution, the calibration of the extrinsic parameters between the linear profiler and the measurement platform can be achieved.

(Fig.1)