SPACE DEBRIS SYMPOSIUM (A6)
Measurements (1)

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DATA ACQUISITION SOFTWARE FOR ISON PROJECT

Abstract

International Scientific Optical Network (ISON) is a world-wide network of small optical telescopes with major focus on space surveillance and space debris research, coordinated by Keldysh Institute for Applied Mathematics in Moscow. Success of its everyday operation highly depends on the software used to obtain high-precision measurements of space objects' positions and magnitudes. A software complex that integrates Apex II image processing platform and FORTE distributed observatory control and image acquisition system is being constantly developed at Pulkovo observatory to meet the demand for high-quality observations of satellites and space debris. We describe the basic design concepts of this software concentrating on recent improvements in the algorithmic base of Apex II, including extensive use of parallel computing and mathematical morphology, as well as on the ideas behind FORTE and their implementation using Python programming language.