Development of orbit analysis software concerto v4 - Orbit determination of low earth orbiters-

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We have been developing orbit analysis software 'concerto v4' or c4. We adopted JAVA as a computer language for c4. Since JAVA runs on many platforms, c4 is independent from OS and machines.

c4 consists of two parts, c4i which integrates a satellite orbit, and c4s which solves the unknown parameters by least square method. We are implementing the physical models in IERS Conventions 2003 in addition to those in IERS Conventions 1996. Even though the old version of concerto can only solve Satellite Laser Ranging data, c4 will be possible to solve GPS code and carrier phase, angular observation, and accelerometer. We have finished the implemantation of GPS code phase analysis.

In this paper, we overview the feature of c4, and describe the result of the orbit determination with GPS precise orbit and CHAMP received data.