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SeisComP3 iLoc integration applied to array processing

With the recent SeisComP3 release the already available seismic event locators including LocSat, Hypo71 and NonLinLoc have been extended with iLoc. iLoc is the expansion of the ISC locator algorithm optimized for seismic event monitoring by local and regional networks, NDCs and global event location studies. With iLoc the open source SeisComP3 system is able to integrate results from array processing modules like GEMPA's commercial software package LAMBDA. To support array processing the graphical user interfaces of the open source SeisComP3 package have been extended to consider phase picks for event localization with slowness and backazimuth in addition to the detection time. Therefore iLoc as a native SeisComP3 locator allows to use the full capacity of array processing in LAMBDA and SeisComP3 during real-time automatic and interactive analysis. LAMBDA provides several array processing techniques as static and dynamic F-K analysis, beam packing and backprojection along traveltime curves. As infrasound phases are supported by iLoc, the seismic and infrasound phases derived by LAMBDA can be used within the localization. Here we present the array processing results for the nuclear weapons tests of North Korea and other induced seismic events applying the iLoc implementation compared to the existing locators like LocSat.

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