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Scientific evaluation of the benefits of increase in resolution for IDC's ATM tools and launching interface

Donald Morton1, Delia Arnold2, Pierre Bourgouin3 1Boreal Scientific Computing LLC, Fairbanks, Alaska USA 2Arnold Scientific Consulting, Manresa, Spain 3Comprehensive Nuclear-Test-Ban Treaty Organization, Vienna, Austria It is generally considered that guidance resulting from ATM usually benefits from an increase of spatial and temporal resolution. Under funding from the European Union Council Decisions VII, our group has initiated a scientific evaluation of that assumption. CTBTO mainly uses ATM guidance in backward mode to link a measurement from an IMS station to a possible source location. However, ATM is also used in forward mode to predict which of the IMS radionuclide stations are likely to be affected given a potential radioactive release. These two aspects will be considered in this study. Increasing resolution implies additional computing resources. A third secondary aspect will be to evaluate the relative cost of running at higher resolution taking into consideration the steady decrease in CPU cost over the years. Results of this study will contribute to define the future evolution of the ATM system within the CTBTO. This presentation will describe the project and present initial results.

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