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and Computer Simulations: Is it a Plausible Alternative to Nuclear Testing?

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Nuclear explosion tests are seen as primary source of testing the behavior and performance of nuclear weapon systems since nuclear test is the only credible source of validating the actual performance of a weapon system. Comprehensive Nuclear-Test Ban Treaty (CTBT) propagates all-inclusive ban on nuclear testing, but cold test or computer simulations are not banned under the provisions of CTBT. With extraordinary advances in the field of computing, data sciences, artificial intelligence and quantum computing, many countries have gained the expertise and experience to combine computer systems and military and weapon technologies (including nuclear weapons) together to get optimum outputs. This paper will examine whether the cold testing or computer simulations are a substitute or plausible alternative for nuclear testing in order to study, predict and evaluate the behavior and accuracy of nuclear explosions in absence of nuclear testing.

Promotional text

Given advances in quantum computing, data sciences, artificial intelligence, nuclear testing behavior can be analyzed short of nuclear tests. It is imperative that these disruptive technological changes be analyzed to map out its possible impact on CTBT's norms.

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