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Title: Consortium for Monitoring, Technology, and Verification (MTV)

Abstract:

Preventing the spread of nuclear weapons is one of the central challenges facing our society today. The development of a nuclear weapons program by a state actor, or the acquisition of a nuclear device by a rogue organization, has the potential for creating domestic unrest, political instability, and economic disruption on the national and global scale. The Consortium for Monitoring, Technology, and Verification (MTV) mission is to develop new technologies that detect and deter nuclear proliferation activities and to train the next generation of nuclear professionals. The MTV provides a strong pipeline for the future NNSA workforce, launching careers within the national laboratories, government, academia, and industry.

The MTV addresses gaps and challenges in the technologies needed to monitor and verify nuclear capabilities around the world by executing research projects in close collaboration with the national laboratories. Our effort focuses on three technical thrust areas: (i) fundamentals of nuclear and particle physics, (ii) signals and source terms for nuclear nonproliferation, and (iii) nuclear explosion monitoring. Cross-cutting areas of MTV will include: (1) modeling and simulation, (2) nuclear policy, and (3) education and outreach. The MTV examines the physics and chemistry of fission, discover new relevant science, deliver advanced technologies to monitor special nuclear material at all stages of the nuclear fuel cycle, and significantly improves our ability to detect and characterize a nuclear explosion.