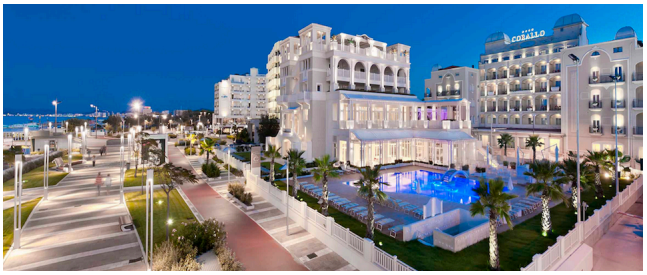

Contribution ID: **79** Type: **invited**

Considerations toward a Compact Coherent Light Source based \\ on a Two-Beam Acceleration Technique

Friday, 9 June 2023 09:00 (30 minutes)

The demonstration of the reliable operation of an X-band radio-frequency (RF) photoinjector with fields ∼ 0.4~GV/m [1] on a photocathode provides a pathway to bright electron bunches. This success was enabled by powering the RF gun with short RF pulses thereby mitigating breakdowns and dark-current generation. The ~300-MW RF pulses were generated by decelerating a high-charge relativistic bunch train. This contribution summarizes ongoing activities focused on further deploying this two-Beam acceleration technique concept toward a free-electron laser demonstration at the Argonne Wakefield Accelerator with a focus on the beam dynamics and photon-generation aspects.

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