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Mitigation of Wakefield Effects in Tesla-type Superconducting rf Cavities: Time-Resolved Diagnostics and Machine Learning Opportunity

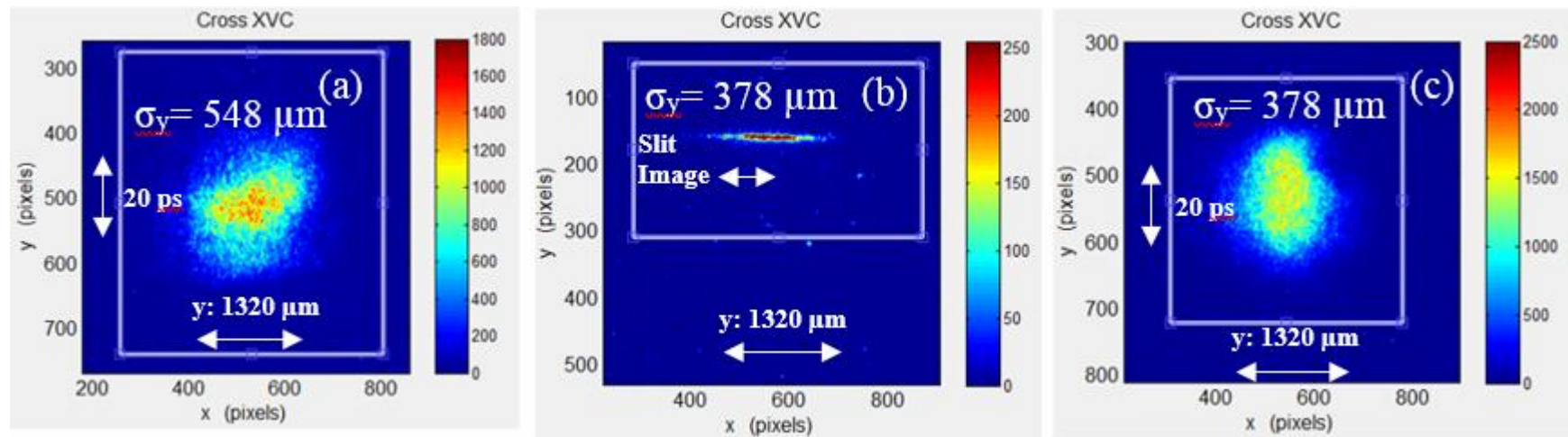
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GARD Workshop 2, Open Mic Slide

21 May 2021

“As found” Steering Shows Submicropulse SRW Effects

- Beam size dilution due to SRW quantified at >40% in streak camera images (Range 1) at X121 in FAST beamline.
- Laser spot 0.2 mm RMS, Q=500 pC/b, E=41 MeV after CC2.
- Later time is upward in streak image.



HOMs As Found:
Machine Learning Opportunity

HOMs Minimized

PRAB, 5/4/2020