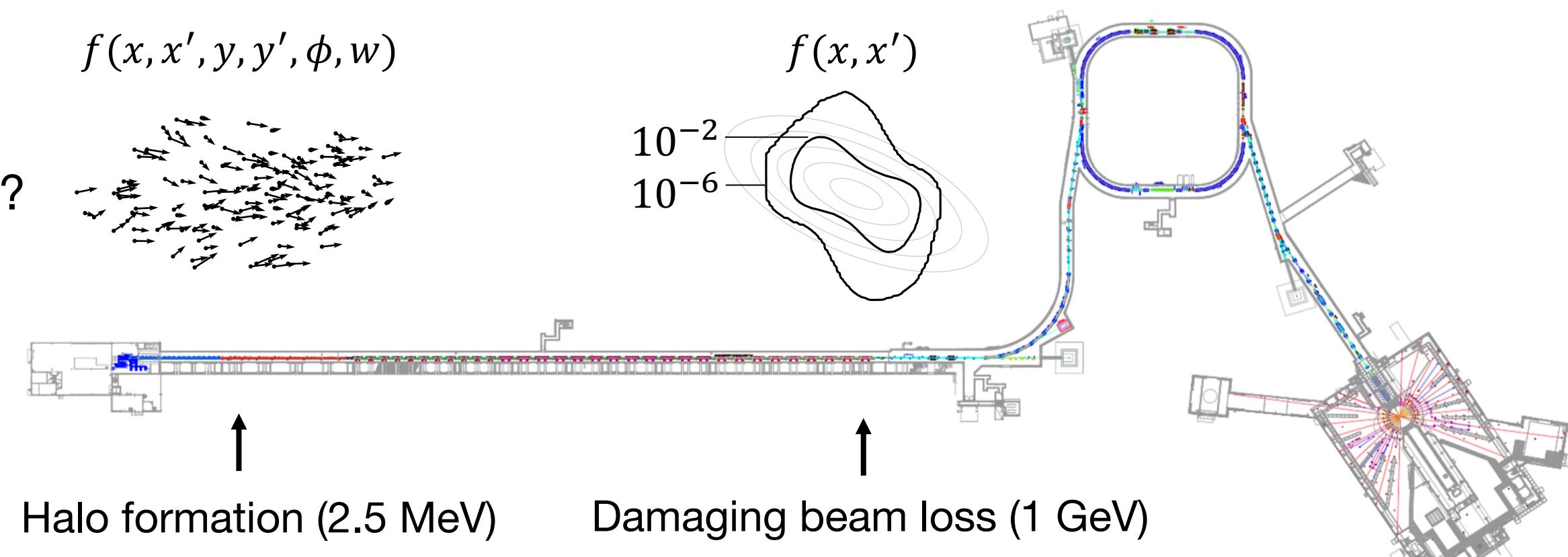


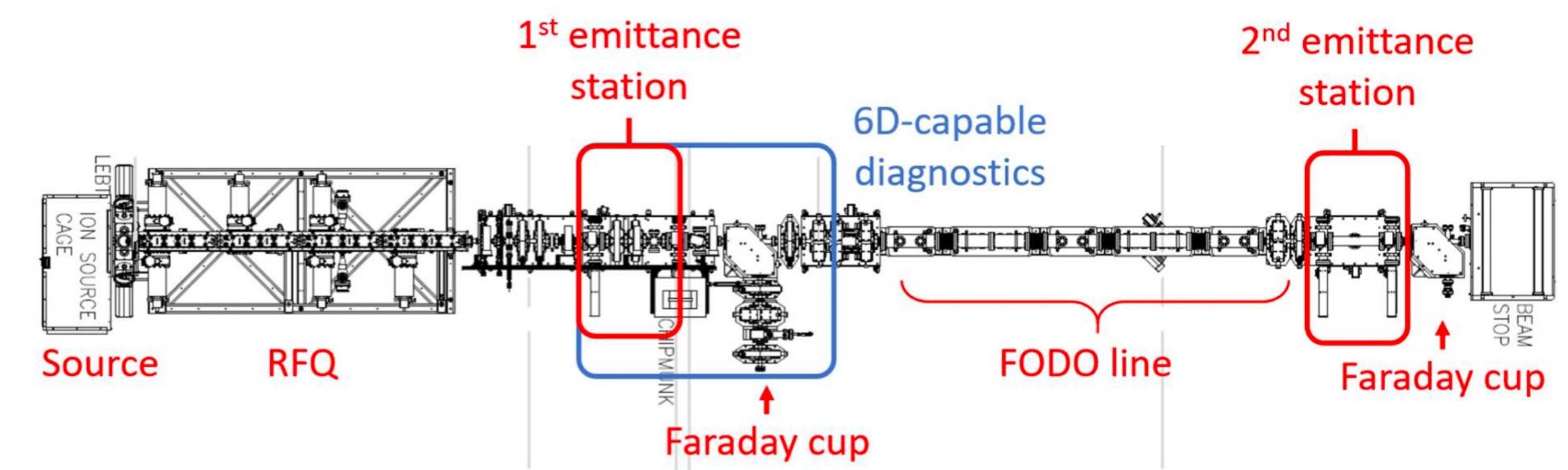
# High-dimensional phase space measurements at the Spallation Neutron Source Beam Test Facility

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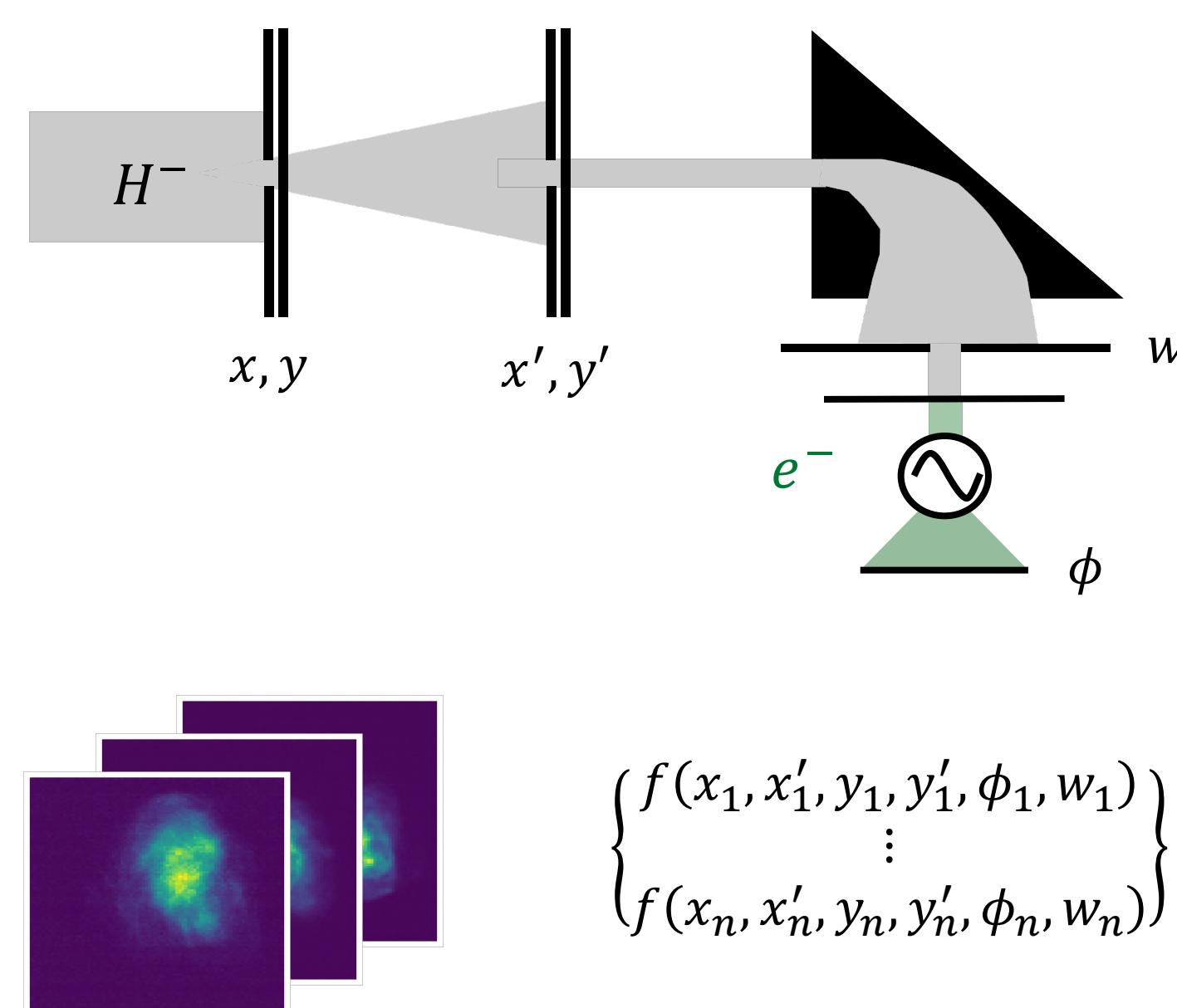
Halo formation limits hadron beam intensity



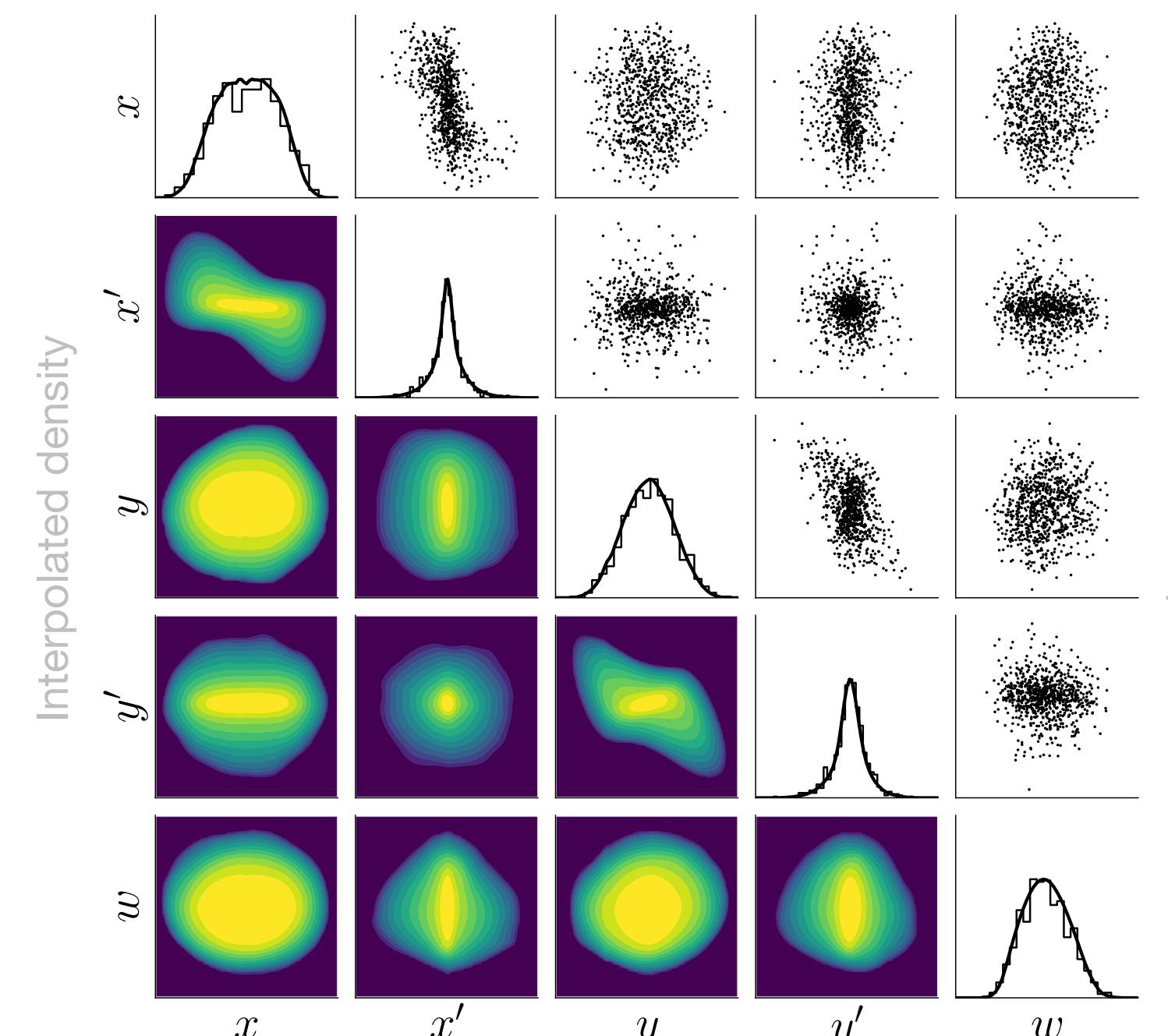
SNS Beam Test Facility enables detailed model benchmarking



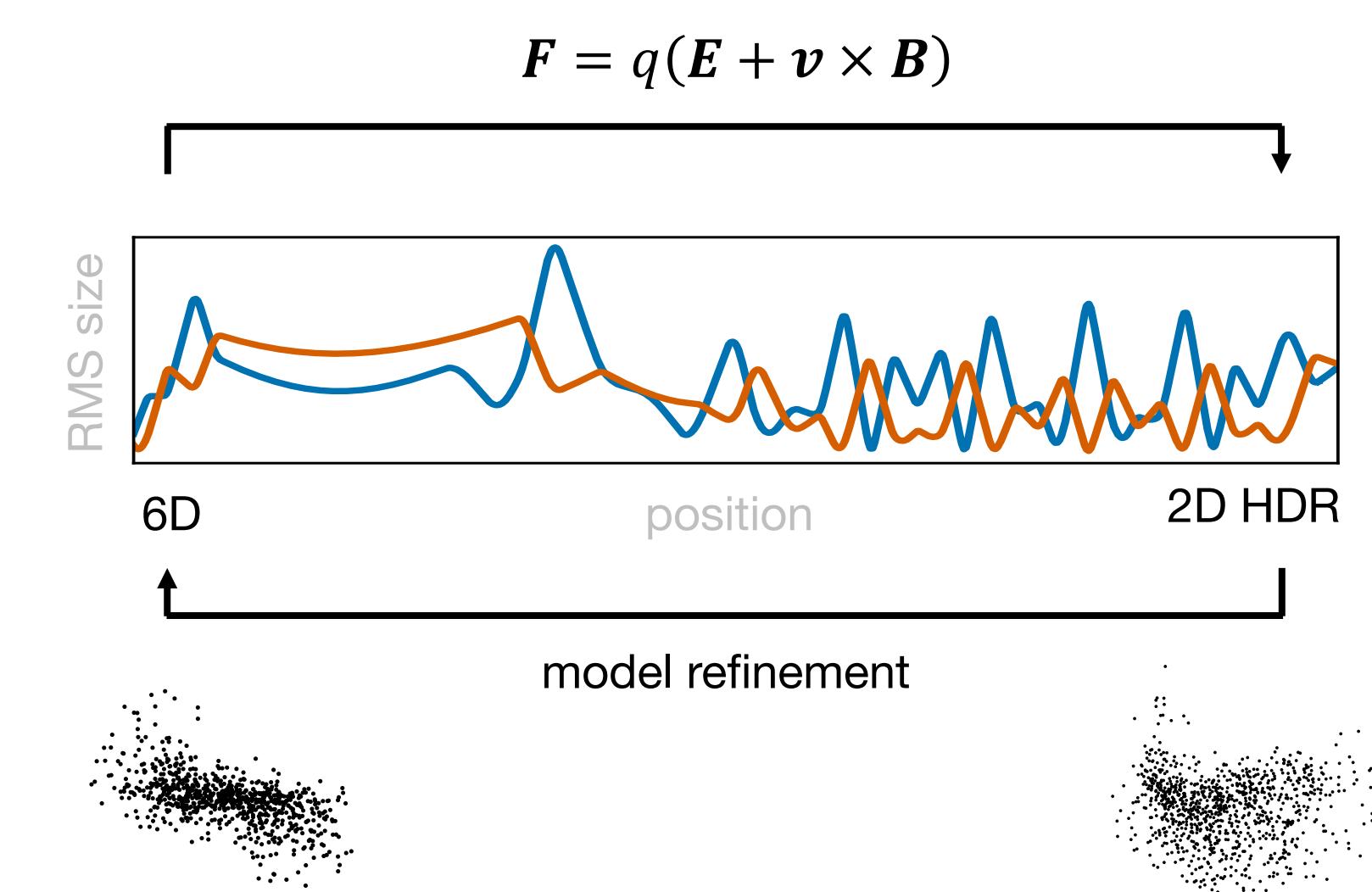
High-dimensional phase space measurements



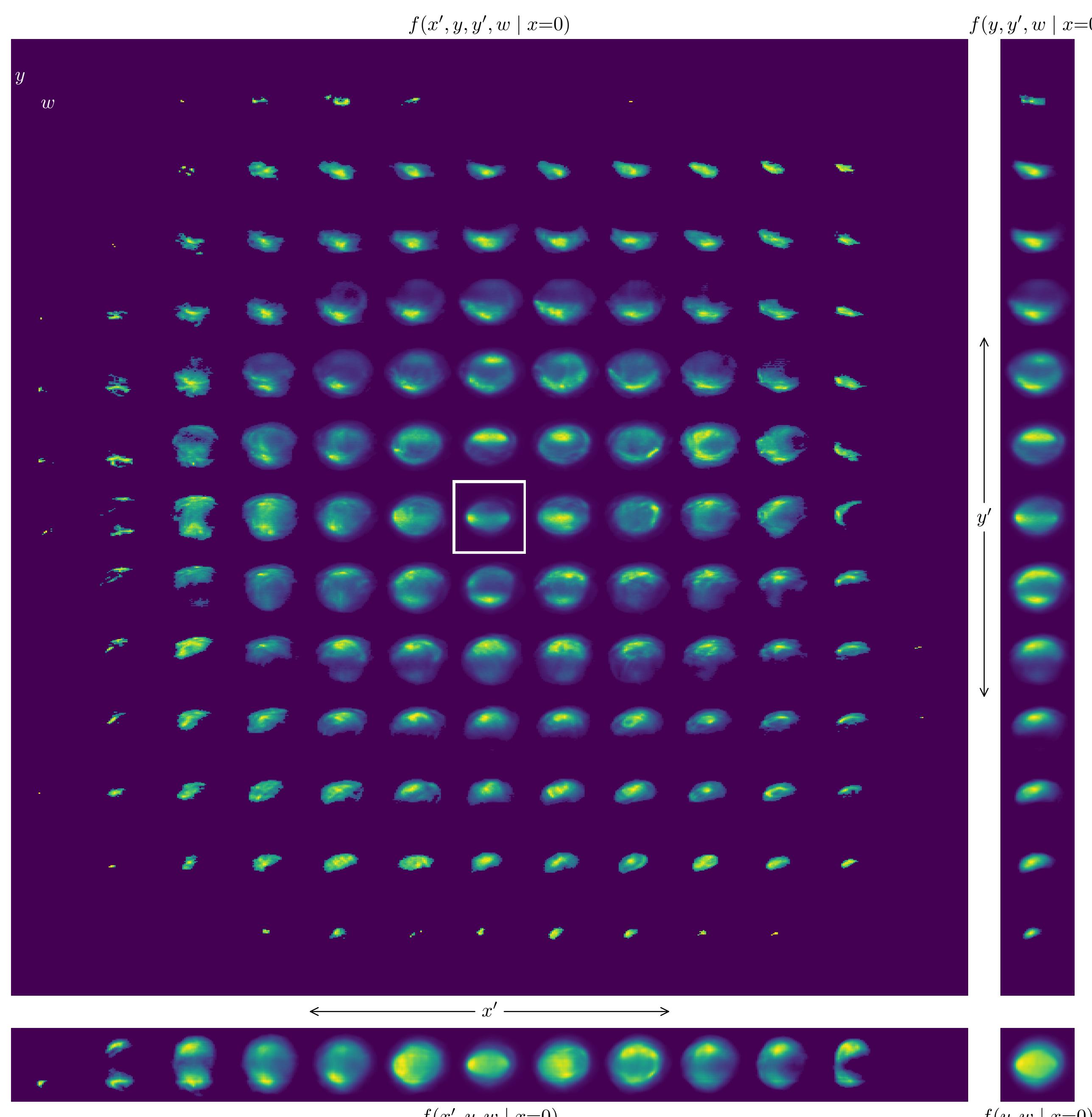
6D bunch reconstruction



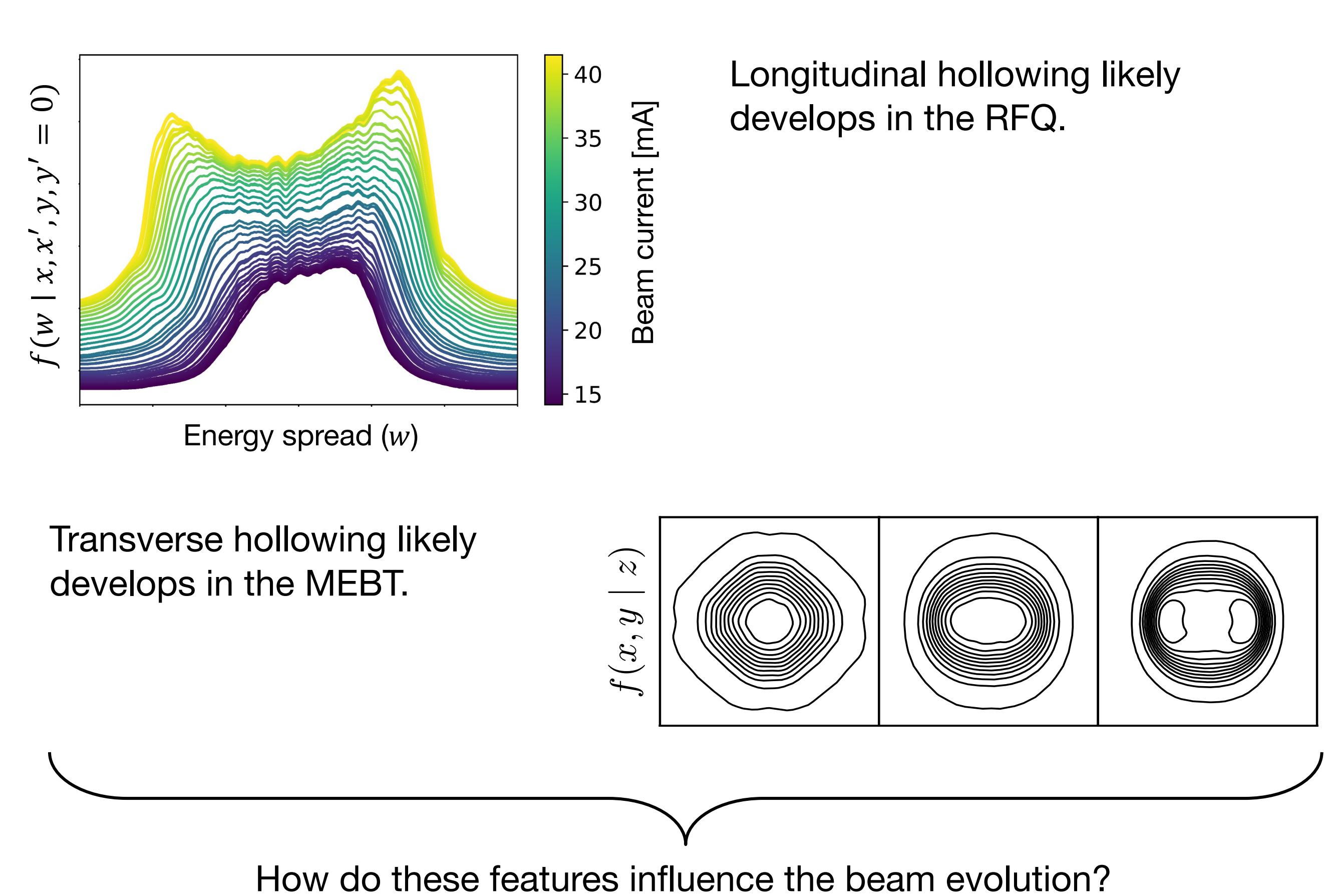
Simulation model evaluation



Measurements unveil rich high-dimensional structure



High-dimensional structure encodes prior beam dynamics



How do these features influence the beam evolution?

## References

- Cathey, B, et al. "First six-dimensional phase space measurement of an accelerator beam." *PRL* 121.6 (2018): 064804.
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- Hoover, A, et al. "Analysis of a hadron beam in five-dimensional phase space." *arXiv:2301.04178* (2023).

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