Stanford

Juan Pablo Gonzalez-Aguilera

Research Assoc-Experimental, Accelerator

Bio

EDUCATION AND CERTIFICATIONS

- PhD, University of Chicago , Physics (2026)
- MS, University of Chicago , Physics (2022)
- BS, Universidad de los Andes (Colombia) , Physics (2019)

Publications

PUBLICATIONS

- **Deployment and validation of predictive 6-dimensional beam diagnostics through generative reconstruction with standard accelerator elements.** *Scientific reports*
  Kim, S., Gonzalez-Aguilera, J. P., Roussel, R., Kim, G., Edelen, A., Cho, M., Kim, Y., Shim, C. H., Heo, H., Yang, H.
  2025; 15 (1): 43049
- **Efficient six-dimensional phase space reconstructions from experimental measurements using generative machine learning** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*
  Roussel, R., Gonzalez-Aguilera, J., Wisniewski, E., Ody, A., Liu, W., Power, J., Kim, Y., Edelen, A.
  2024; 27 (9)
- **Four-dimensional phase-space reconstruction of flat and magnetized beams using neural networks and differentiable simulations** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*
  Kim, S., Gonzalez-Aguilera, J., Piot, P., Chen, G., Doran, S., Kim, Y., Liu, W., Whiteford, C., Wisniewski, E., Edelen, A., Roussel, R., Power, J.
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- **Phase Space Reconstruction from Accelerator Beam Measurements Using Neural Networks and Differentiable Simulations** *PHYSICAL REVIEW LETTERS*
  Roussel, R., Edelen, A., Mayes, C., Ratner, D., Gonzalez-Aguilera, J. P., Kim, S., Wisniewski, E., Power, J.
  2023; 130 (14)
- **Differentiable Preisach Modeling for Characterization and Optimization of Particle Accelerator Systems with Hysteresis** *PHYSICAL REVIEW LETTERS*
  Roussel, R., Edelen, A., Ratner, D., Dubey, K., Gonzalez-Aguilera, J. P., Kim, Y. K., Kuklev, N.
  2022; 128 (20)
- **Turn-key constrained parameter space exploration for particle accelerators using Bayesian active learning** *NATURE COMMUNICATIONS*
  Roussel, R., Gonzalez-Aguilera, J., Kim, Y., Wisniewski, E., Liu, W., Piot, P., Power, J., Hanuka, A., Edelen, A.
  2021; 12 (1)