

AINP working group: **Bayesian Inference for Quantum Correlation Functions**

Wednesday, 4 March, 14:00 - 17:30

- 14:00 **Nobuo Sato** (JLab)
“Quantum correlations functions overview”
- 14:15 **Alberto Accardi** (Hampton U./JLab)
“Measuring the unobservable: quark and gluon distributions in the proton”
- 14:30 **Juan Rojo** (Nikhef)
“Artificial intelligence to map the proton structure”
- 14:45 **Andrea Signori** (Pavia U./JLab)
“Structure of TMD observables”
- 15:00 **Christian Weiss** (JLab)
“Generalized parton distributions overview”
- 15:15 **Break**
- 15:30 **Carlota Andres** (JLab)
“JAM multi-step strategy”
- 15:45 **Yiyu Zhou** (William & Mary)
“AI for jets in JAM”
- 16:00 **Patrick Barry** (NCSU)
“Pion PDFs and challenges in implementing threshold resummation”
- 16:15 **Chris Cocuzza** (Temple U.)
“Machine learning for global fits”
- 16:30 **Alexei Prokudin** (PSU Berks)
“The origin of spin asymmetries”
- 17:00 **Simonetta Liuti** (U. Virginia)
“ML-based analysis of deeply-virtual exclusive processes”
- 17:30 **Adjourn**

Thursday, 5 March, 14:00 - 17:30

- 14:00 **Nobuo Sato** (JLab)
“Universal Monte Carlo event generator”
- 14:15 **Tianbo Liu** (JLab)
“GAN from pseudo data to real data: inverse problem for detector effects”
- 14:30 **Luisa Valesco** (U. Dallas)
“GANs for ETHER”
- 14:45 **Yaohang Li** (ODU)
“FAT-GAN architecture for simulation of electron-proton scattering events”
- 15:00 **Yasir Alanazi** (ODU)
“CNN-GAN for physical event generation”
- 15:15 **Break**
- 15:30 **Nobuo Sato** (JLab)
“Next generation of QCD global analysis tools”
- 15:45 **Manal Alemeen** (ODU)
“Machine learning prototypes to solve the inverse problem”
- 16:00 **Herambeshwar Pendyala** (ODU)
“Towards an interactive web based global fitter”
- 16:15 **Break**
- 16:30 **Jake Ethier** (Nikhef)
“Nuclear PDFs with neural nets”
- 16:45 **Kostas Orginos** (William & Mary/JLab)
“PDFs from the lattice”
- 17:00 **Jake Bringewatt** (U. Maryland)
“Confronting lattice parton densities with global analysis”
- 17:15 **Discussion**
- 17:30 **Adjourn**

Bayesian Inference for Quantum Correlation Functions

- What are the major conclusions / outcomes?
- What are the next steps?
- **“Grand challenges” / “Priority Research Directions”**
- **Input into the summary report of AINP workshop**