

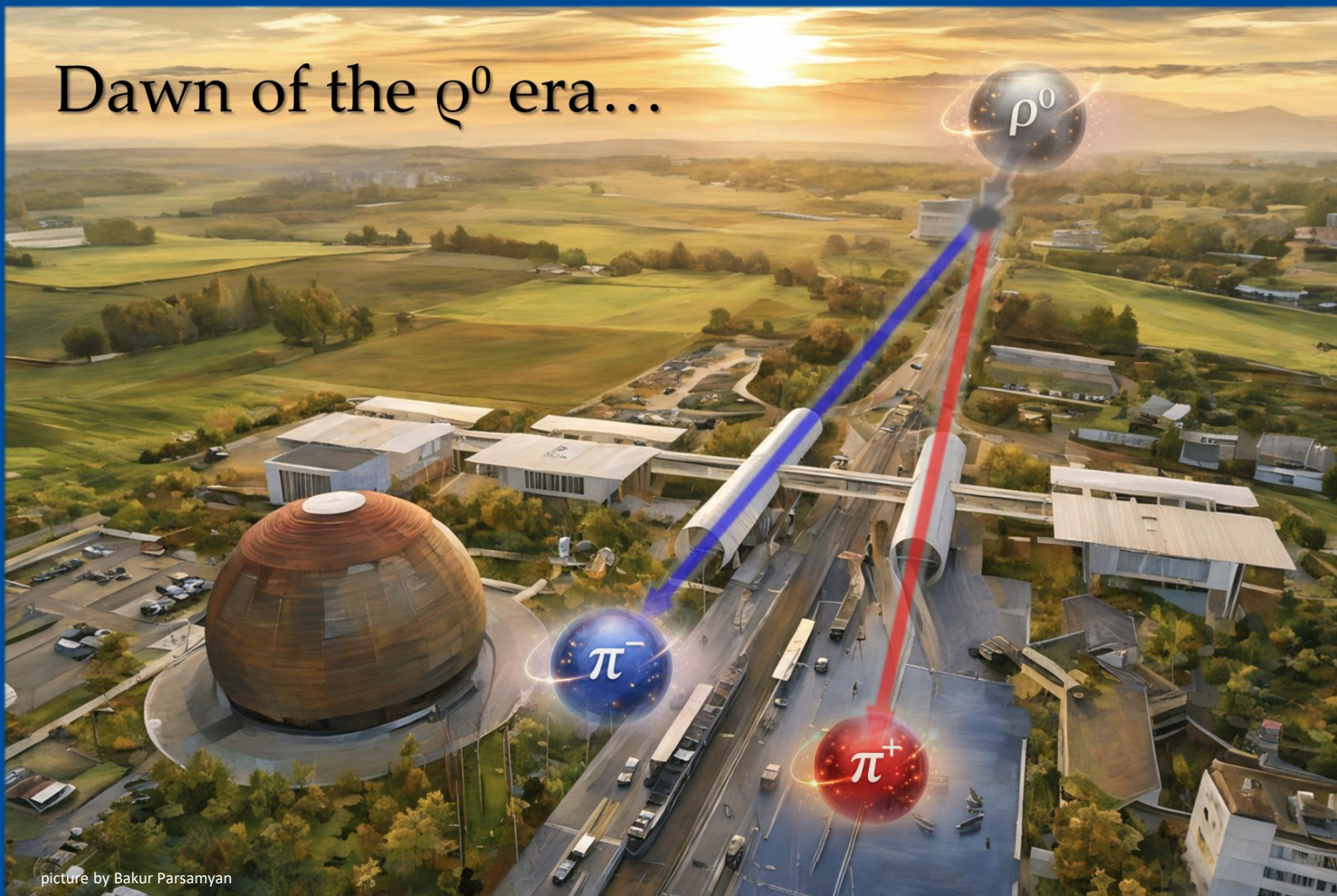
# ExtreMe Matter Institute EMMI

EMMI Rapid Reaction Task Force

## Impact of Vector Mesons on the Studies of the 3D Structure of the Nucleon

June 15-18, 2026  
CERN, Switzerland

Dawn of the  $\rho^0$  era...



picture by Bakur Parsamyan

The following topics will be discussed in dedicated sessions:

- Theory of vector-meson production
- Experimental measurements of vector mesons in lepton production and Monte Carlo development
- Identifying the critical path for helicity-amplitude extractions using Artificial Intelligence tools: LOGISTIC and SCOPE

**Organizers:**

Bakur Parsamyan  
Harut Avakian  
Patrizia Rossi

In accordance with the RRTF framework, this strategic working meeting is designed to bring together a focused group of world-leading experts to address a specific scientific challenge: the significant and often complicating role of diffractive vector mesons (VMs) in the interpretation of 3D nucleon structure data. While hadron production in Deep Inelastic Scattering (DIS) is a primary tool for mapping quark-gluon dynamics through TMDs and GPDs, the presence of exclusive VMs can substantially modify multiplicities and spin asymmetries, potentially biasing phenomenological extractions.

The primary goal of this RRTF is to move beyond the standard conference format and establish a unified theoretical and experimental roadmap. Participants will engage in intensive discussions and collaborative problem-solving to define rigorous strategies for VM subtraction and to develop the next generation of Monte Carlo and AI-based tools required for high-precision data interpretation at facilities such as JLab and the future EIC.

**Information:**

[www.gsi.de/emmi/rrtf](http://www.gsi.de/emmi/rrtf)

**Website:**

<https://indico.cern.ch/event/1657528/overview>

**More about EMMI:**

[www.gsi.de/emmi](http://www.gsi.de/emmi)

