

Piet Mulders and the Amsterdam School

Transversity 2022



Pavia, May 24th, 2022

Travelling to Amsterdam and visiting Piet and his group at Vrije Universiteit has always been a joy and a culturally enriching experience. Piet has created a scientific cultural hub.



**Probing the transverse spin of quarks
in deep inelastic scattering**

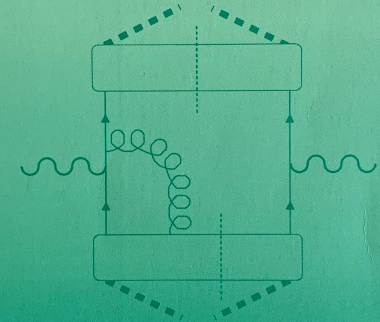


Alessandro Bacchetta

**Single spin asymmetries and gauge invariance
in hard scattering processes**

Fetze Pijlman

**Azimuthal Asymmetries in Hard
Scattering Processes**

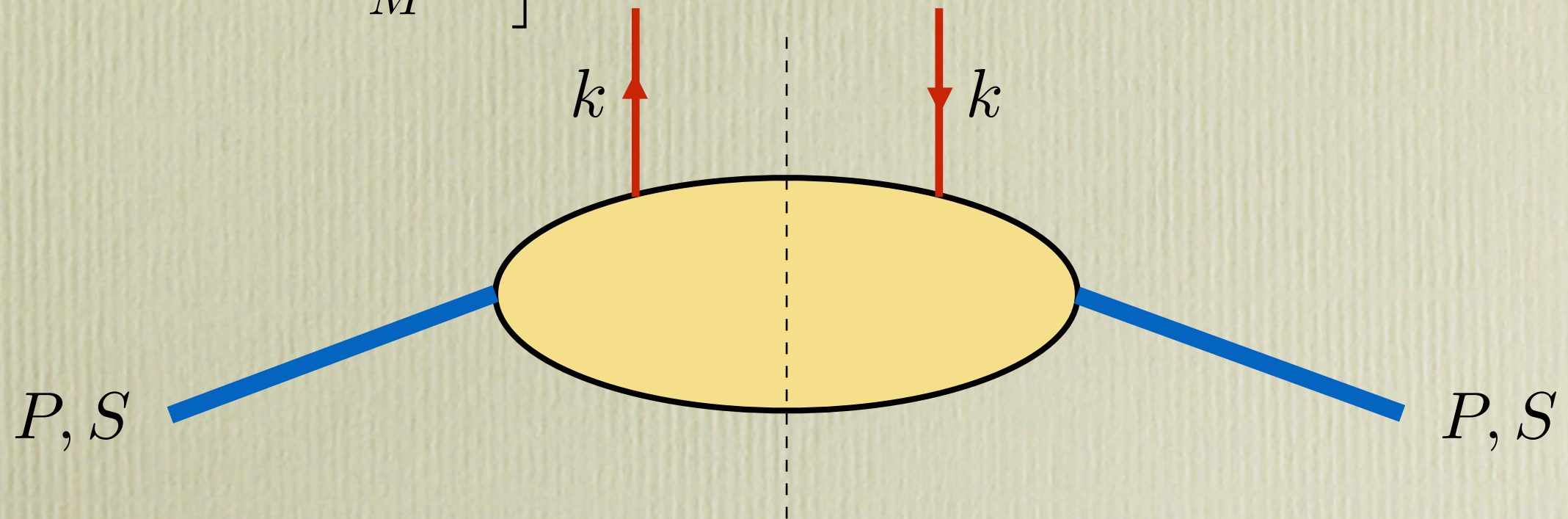


Daniël Boer

21 excellent PhD students, with beautiful PhD theses
(and charming doctoral ceremonies)
many successful postdocs, now active worldwide

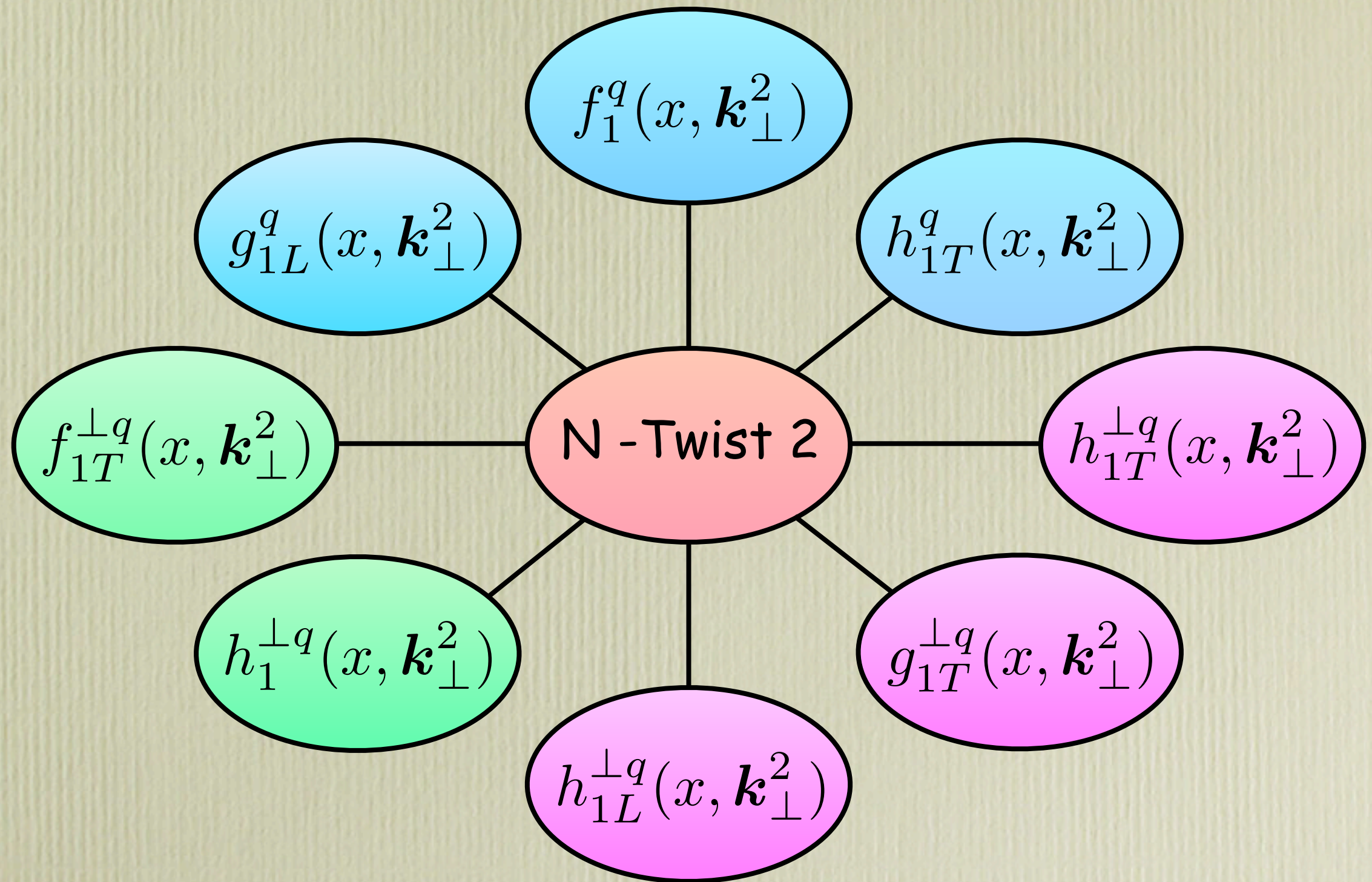
seminal work in studying the nucleon structure

$$\begin{aligned}
 \Phi(x, \mathbf{k}_\perp) = & \frac{1}{2} \left[f_1 \not{n}_+ + f_{1T}^\perp \frac{\epsilon_{\mu\nu\rho\sigma} \gamma^\mu n_+^\nu k_\perp^\rho S_T^\sigma}{M} + \left(S_L g_{1L} + \frac{\mathbf{k}_\perp \cdot \mathbf{S}_T}{M} g_{1T}^\perp \right) \gamma^5 \not{n}_+ \right. \\
 & + h_{1T} i\sigma_{\mu\nu} \gamma^5 n_+^\mu S_T^\nu + \left(S_L h_{1L}^\perp + \frac{\mathbf{k}_\perp \cdot \mathbf{S}_T}{M} h_{1T}^\perp \right) \frac{i\sigma_{\mu\nu} \gamma^5 n_+^\mu k_\perp^\nu}{M} \\
 & \left. + h_1^\perp \frac{\sigma_{\mu\nu} k_\perp^\mu n_+^\nu}{M} \right]
 \end{aligned}$$



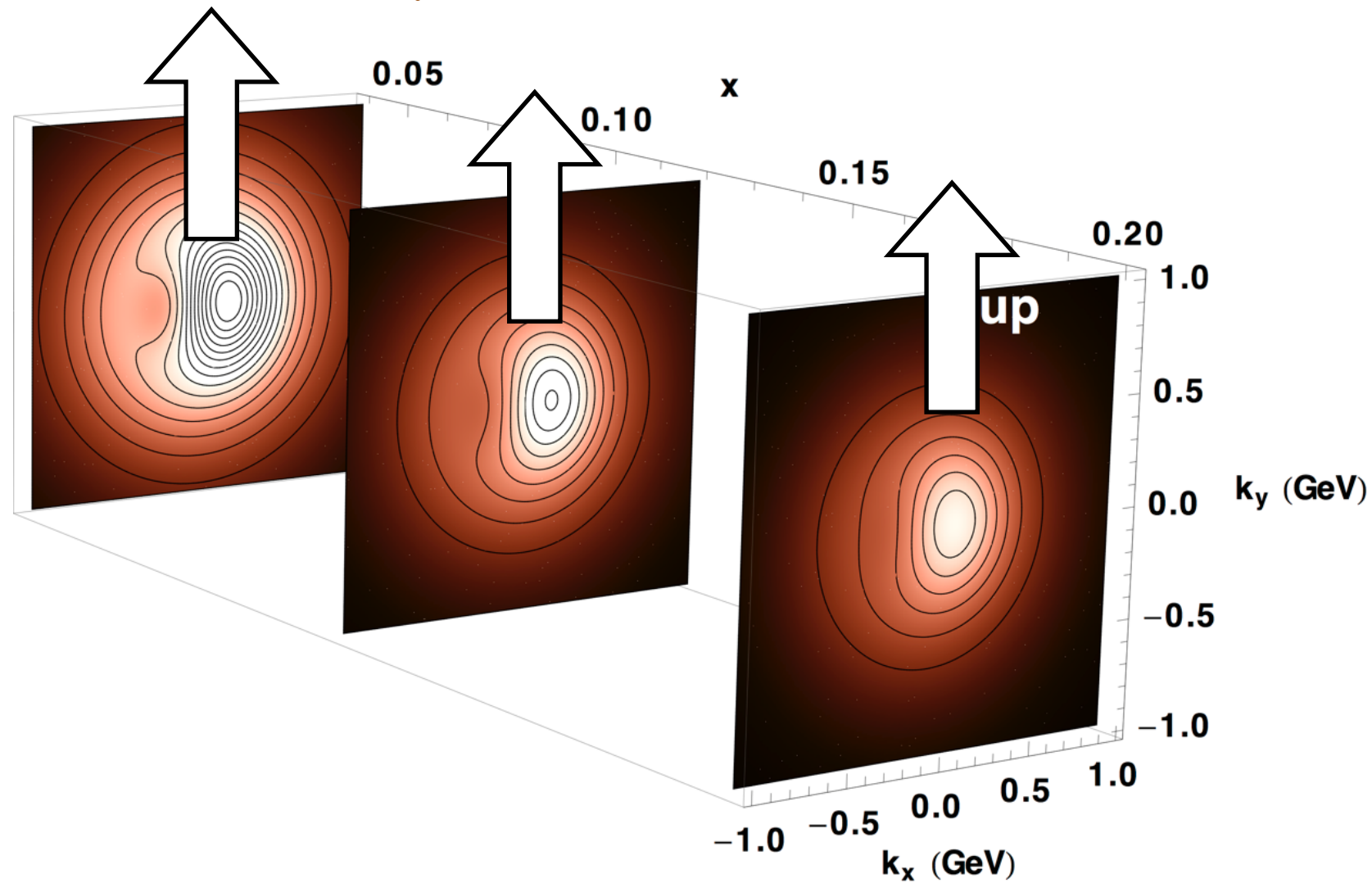
the correlator

The famous Amsterdam notation



interpretation by Aram Kotzinian

and the related phenomenology (theory,
experiments and interpretation):
HERMES, COMPASS, JLab, Pavia, Cagliari, Torino,
Temple, Penn State, ...



u-quark transverse momentum distribution
inside a transversely polarised proton
(courtesy of A. Bacchetta)

Piet has done and promoted high level theoretical research with strong impact in the hadron physics community

It is a bright example of international scientific education and activity, curiosity driven, based on free intellectual thinking and peaceful collaboration



On a more personal touch:
Piet and his wife biking
holidays

many thanks Piet, and many more years of
happiness and adventures

