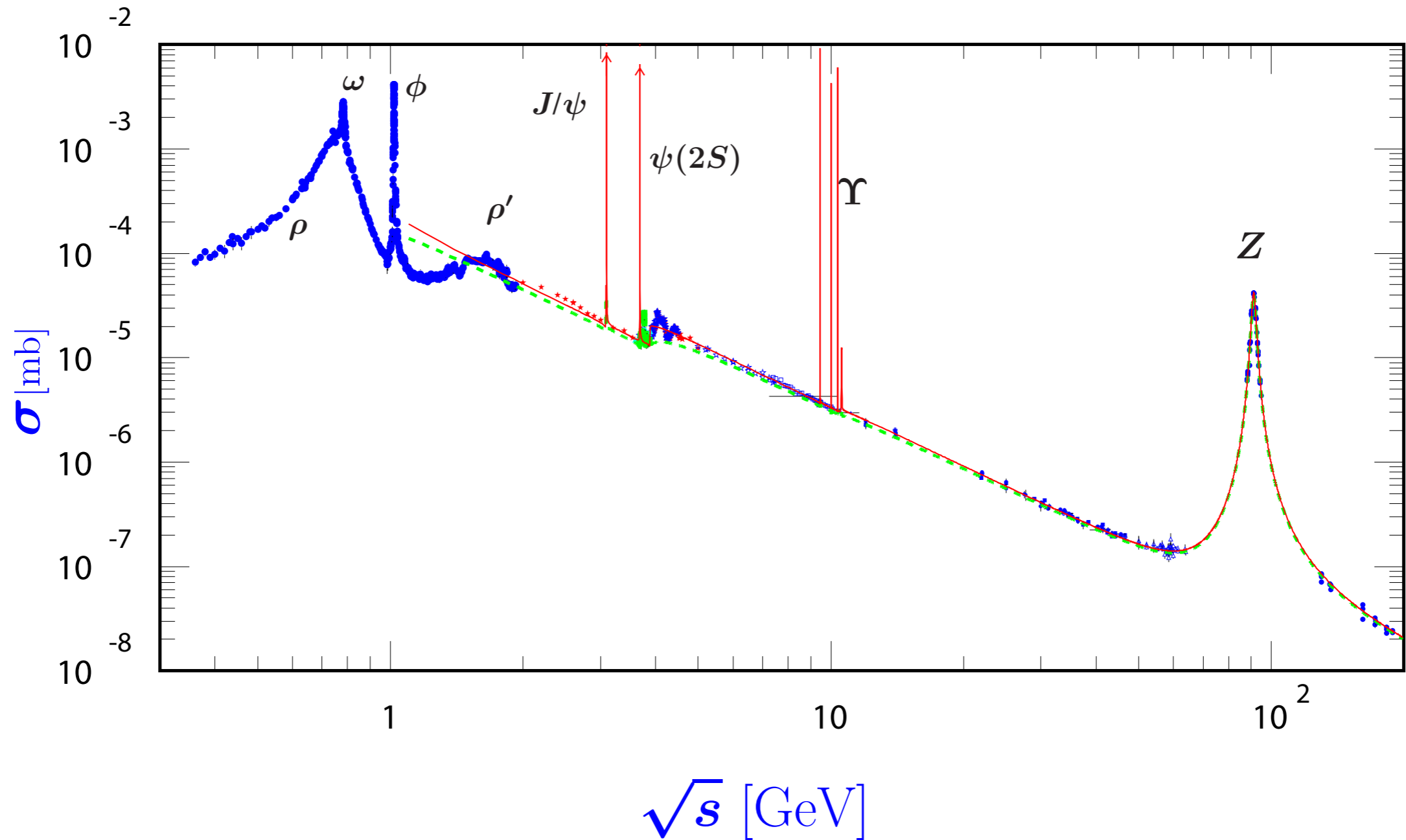
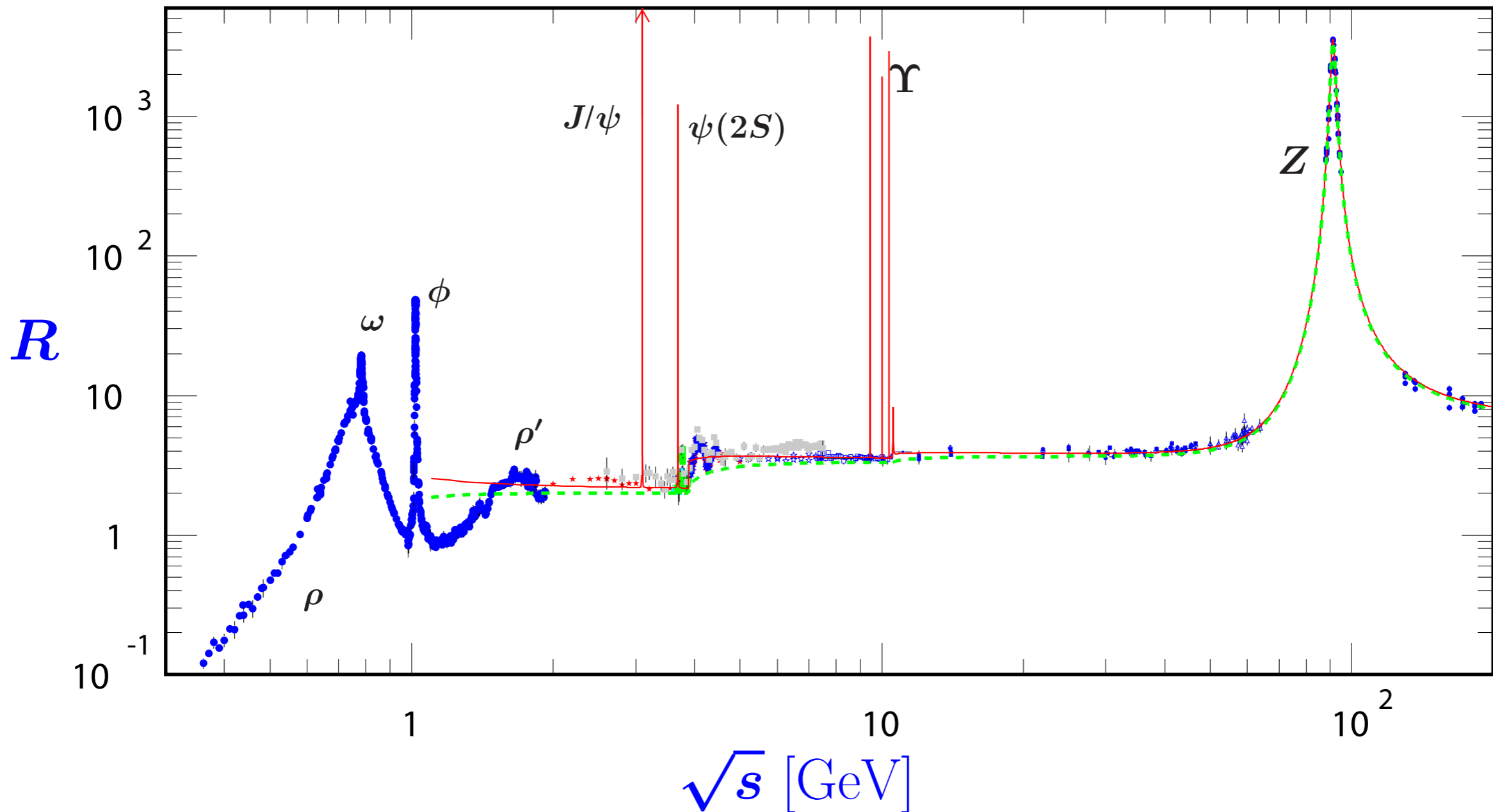


$e^+e^- \rightarrow$ hadrons: cross section

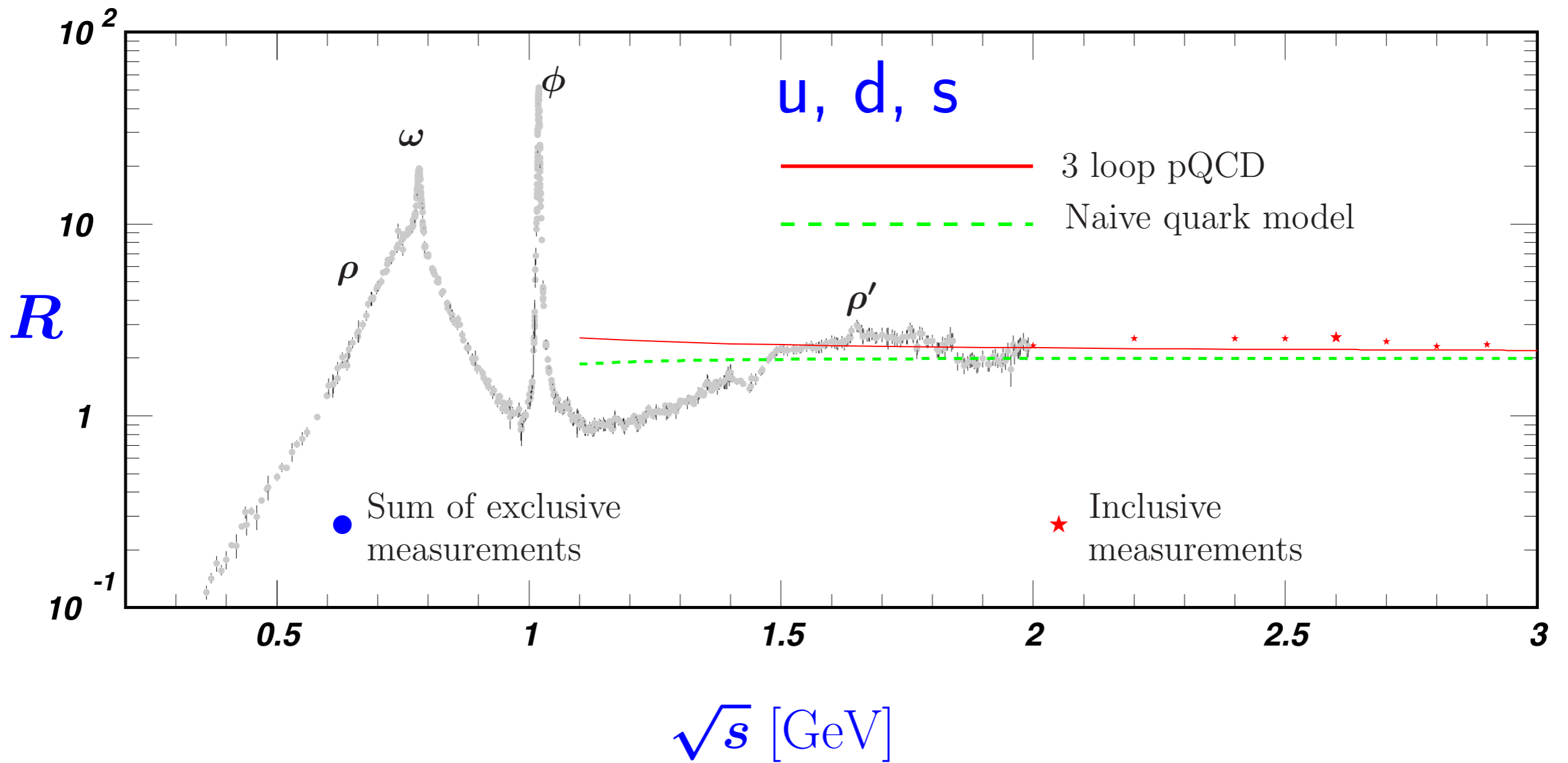


R-ratio

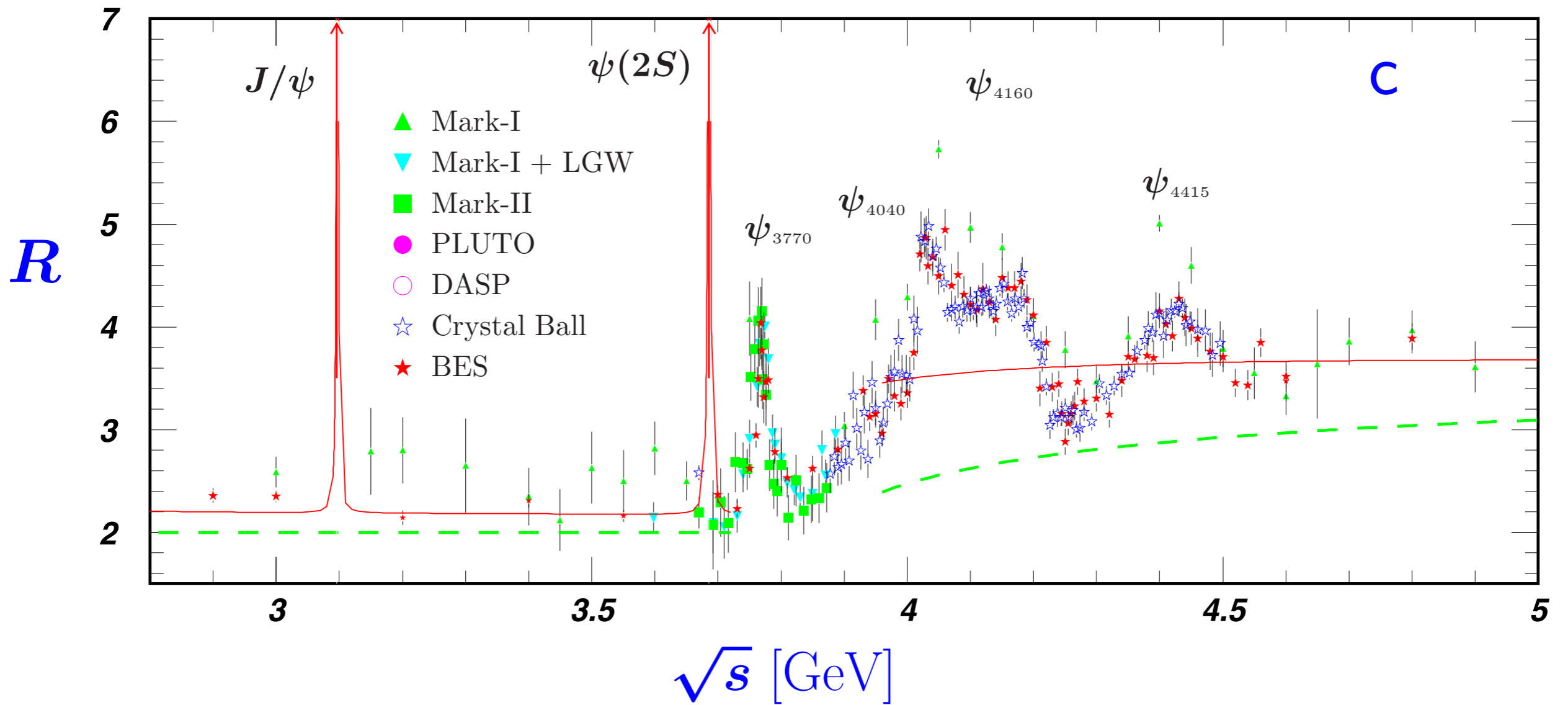


The green dashed line is our LO prediction after inclusion of quark masses and Z-exchange. Red line includes NNLO QCD corrections.

Below charm threshold

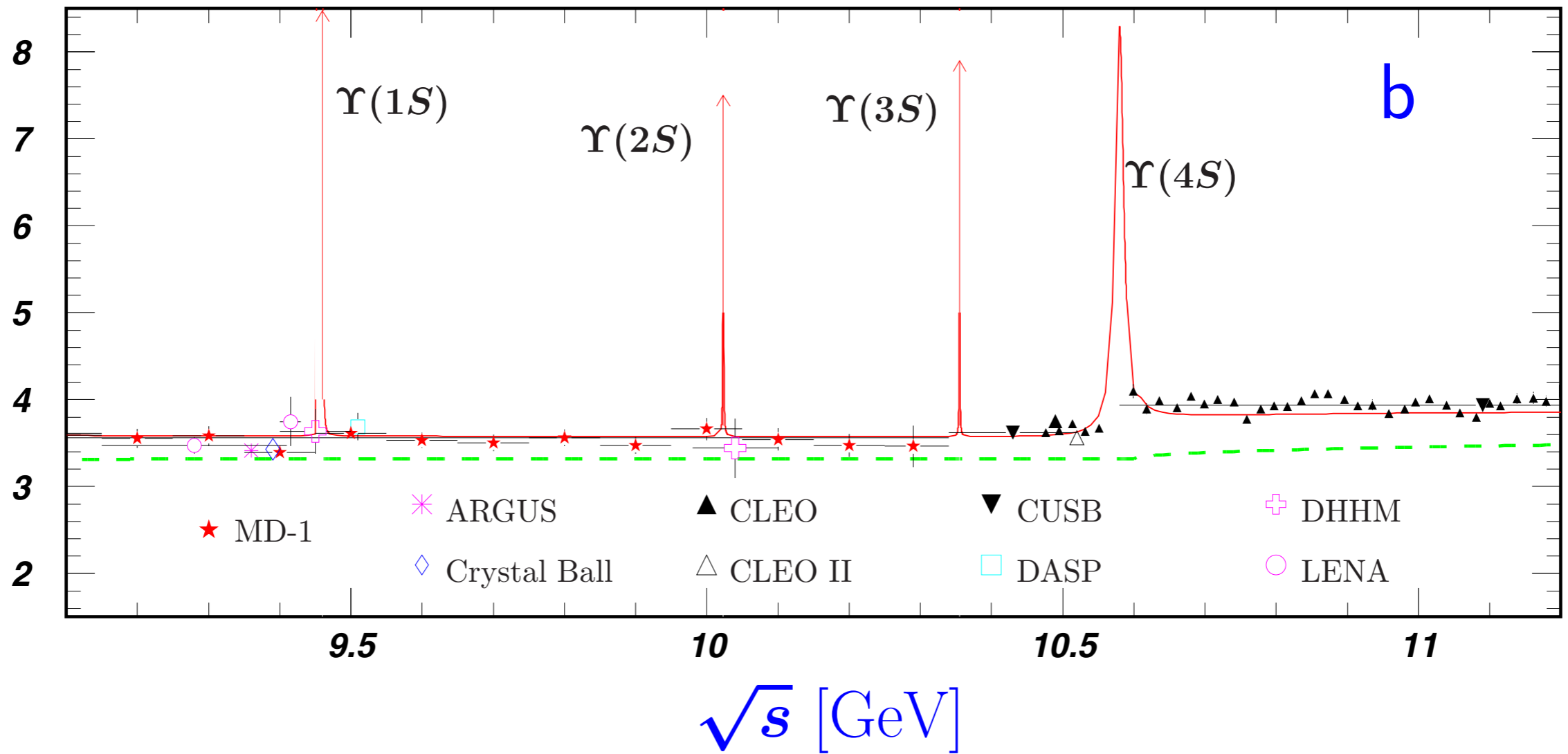


charm region

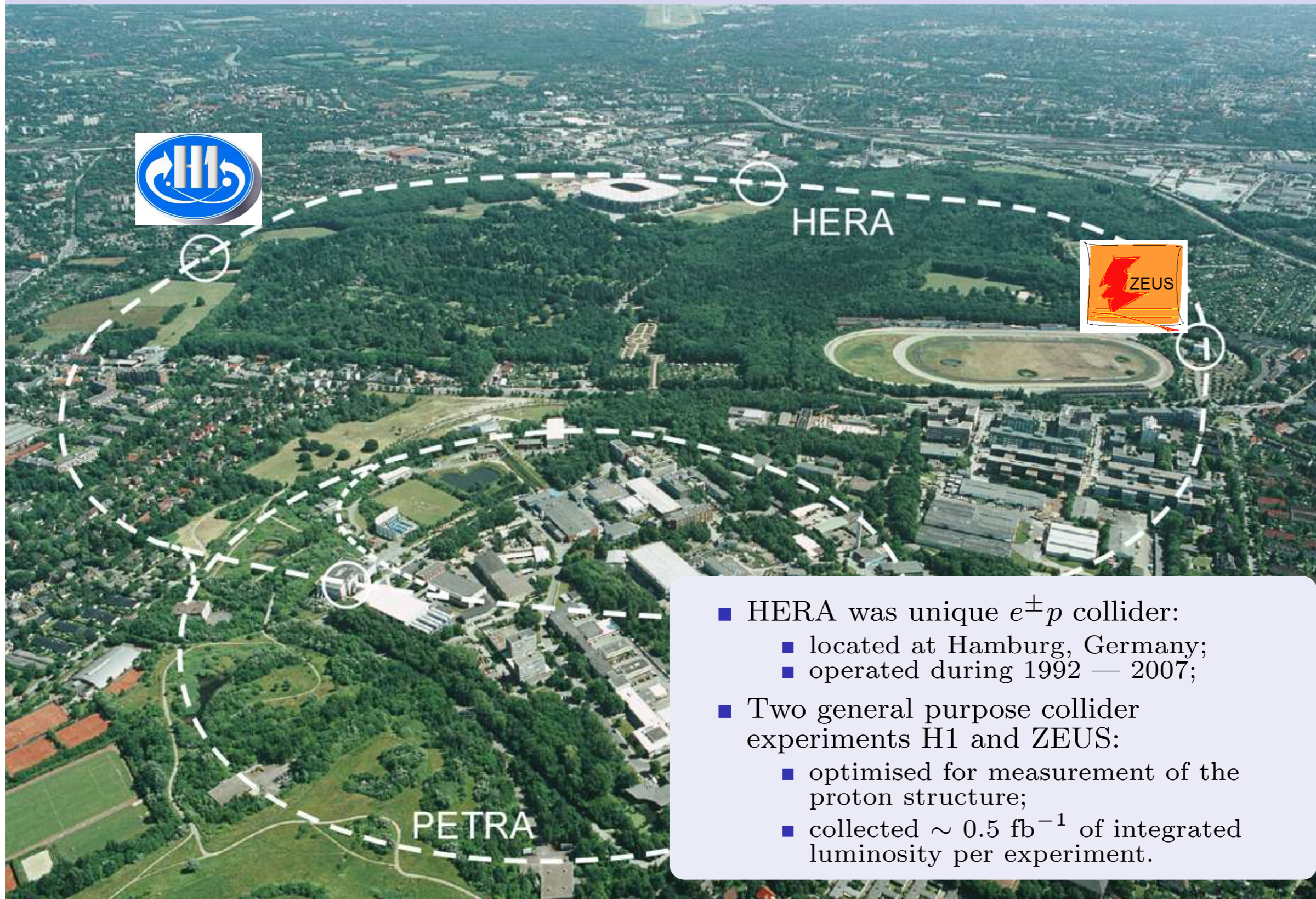


b-quark threshold region

R

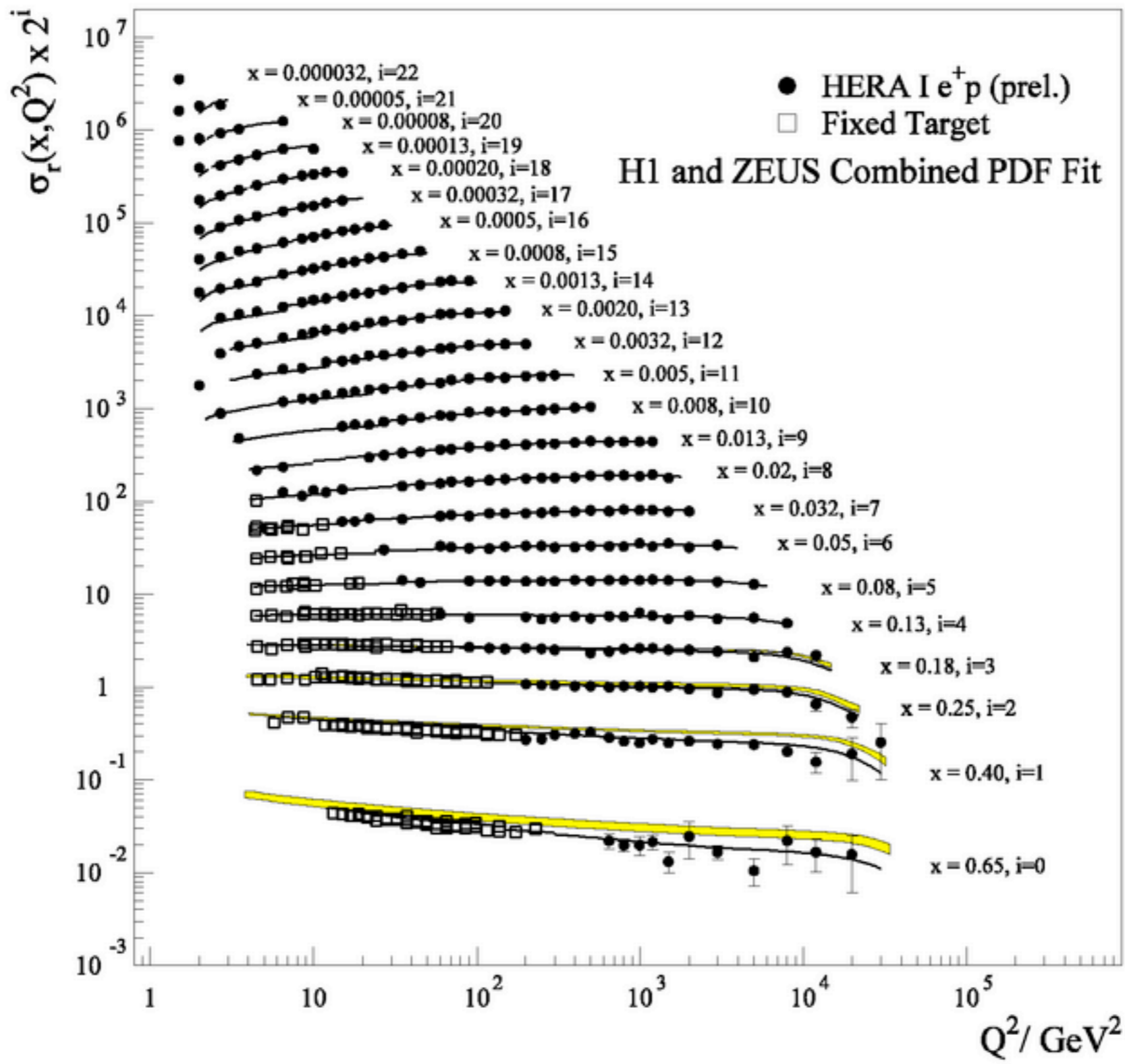


HERA collider. H1 and ZEUS experiments.

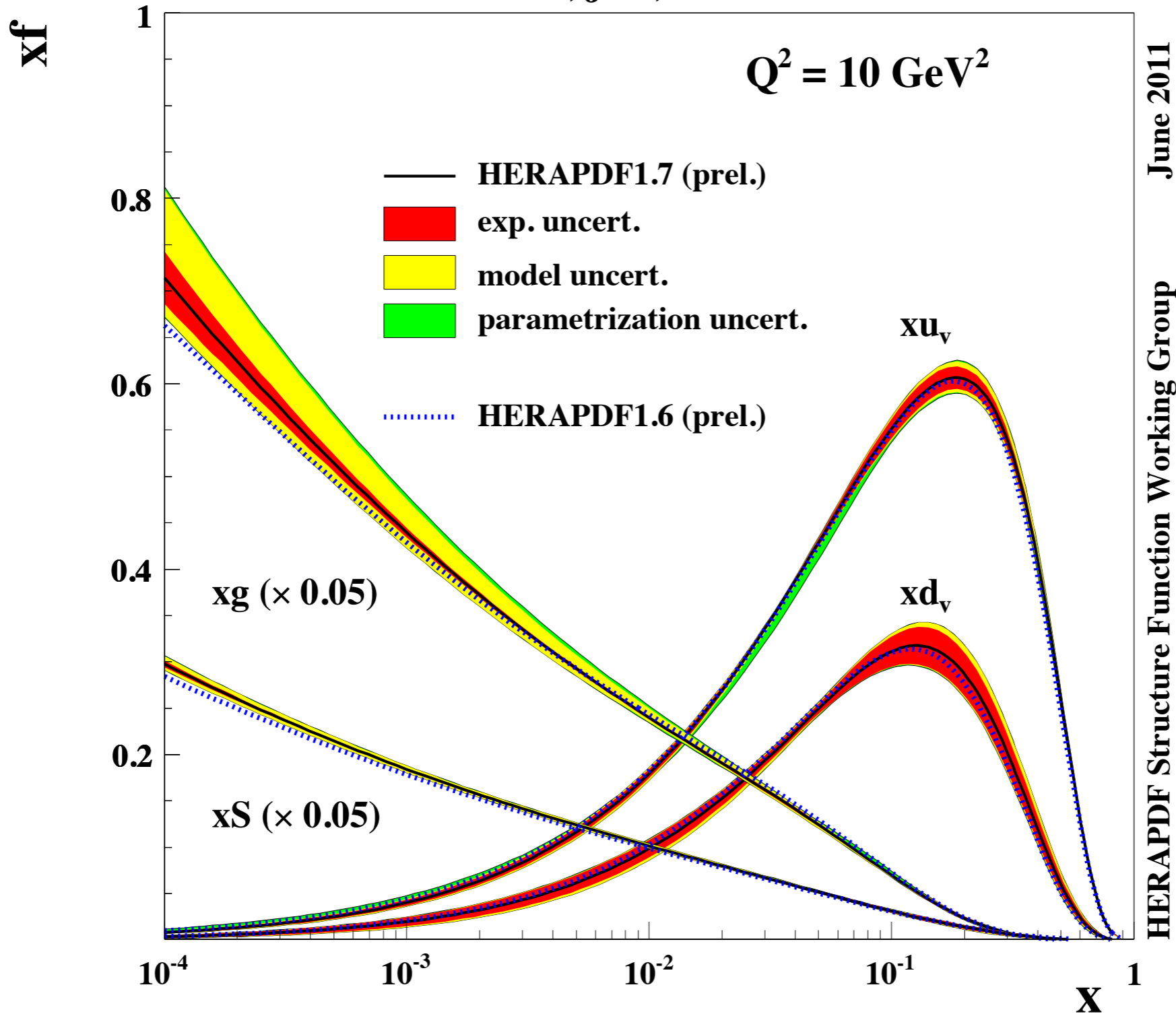


- HERA was unique $e^{\pm}p$ collider:
 - located at Hamburg, Germany;
 - operated during 1992 — 2007;
- Two general purpose collider experiments H1 and ZEUS:
 - optimised for measurement of the proton structure;
 - collected $\sim 0.5 \text{ fb}^{-1}$ of integrated luminosity per experiment.

from Denys Lontkovskyi talk, Moriond QCD 2012



HERA I+II inclusive, jets, charm PDF Fit



The plot shows $x \cdot f_i(x)$