

Contribution Title:	THE INFRARED PROBLEM IN NONRELATIVISTIC QED
Authors:	A. Pizzo
Presenting author:	Pizzo A.
Affiliation:	University of California Davis
E-mail:	pizzo@math.ucdavis.edu
Invited speaker:	Plenary
YRS seminar:	NO

The fact that photons are massless particles introduces substantial difficulties into the mathematical analysis of the interaction between nonrelativistic quantum matter and the quantized radiation field. These difficulties are known as the infrared problem in (nonrelativistic) QED. This issue is of particular interest in atomic physics. After a review of the different aspects of the infrared problem, I report on recent progress concerning some of the open mathematical questions. Within this context, I outline some novel spectral and scattering techniques based on multi-scale analysis.