

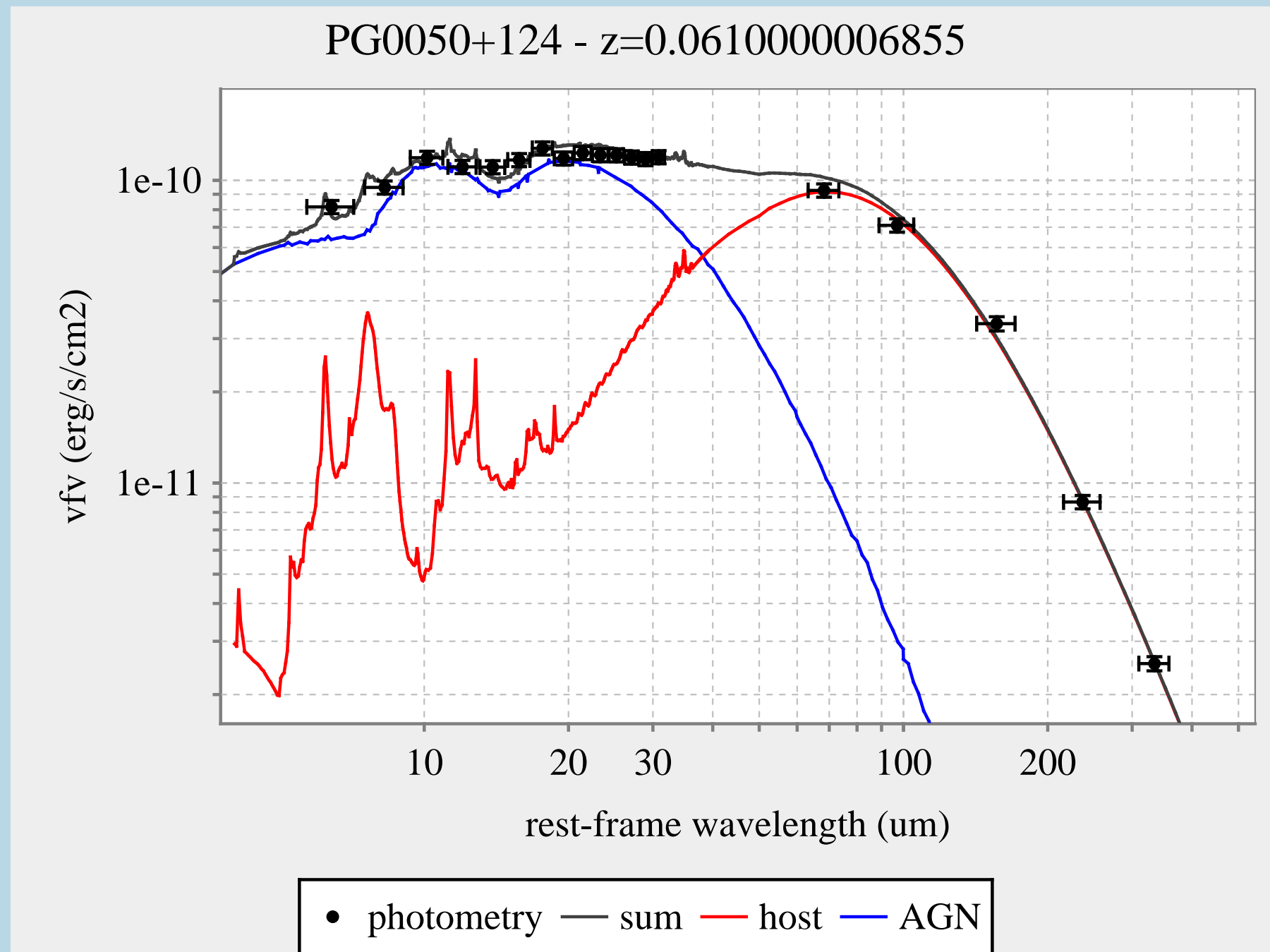
AGN Intrinsic SED at Far Infrared Band



Jun Xu, Mouyuan Sun, Yongquan Xue
 junx2009@mail.ustc.edu.cn, ericsun@ustc.edu.cn
 University of Science and Technology of China

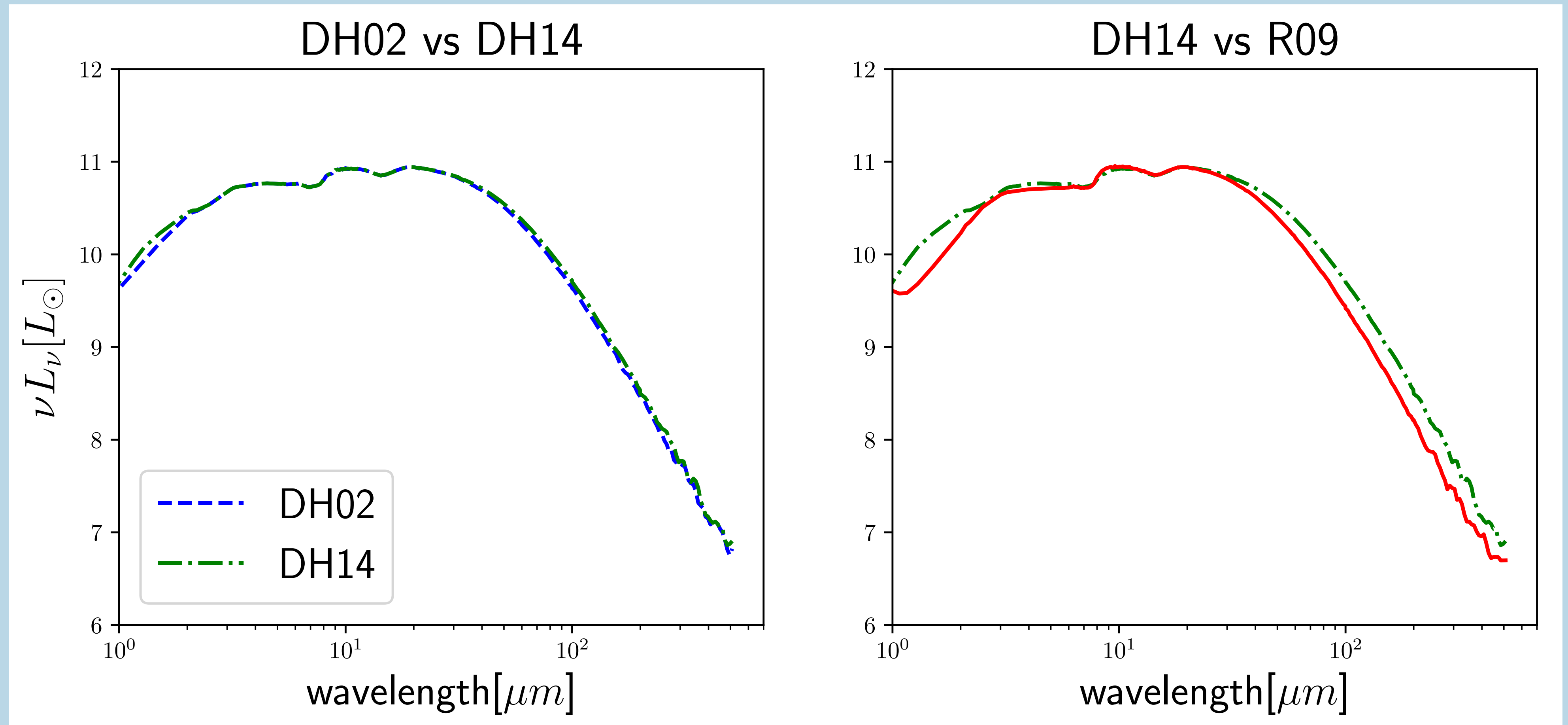
Abstract

We use the 87 $z < 0.5$ PG quasars to constrain the AGN SED in the far infrared band. We isolate AGN contributions via SED decomposition. Our mean AGN SED in the far infrared is consistent with many previous works but in stark contrast to Symeonidis et al. (2016, hereafter S16).



Our intrinsic AGN IR SED

Our AGN templates is not very sensitive to the galaxy template library.



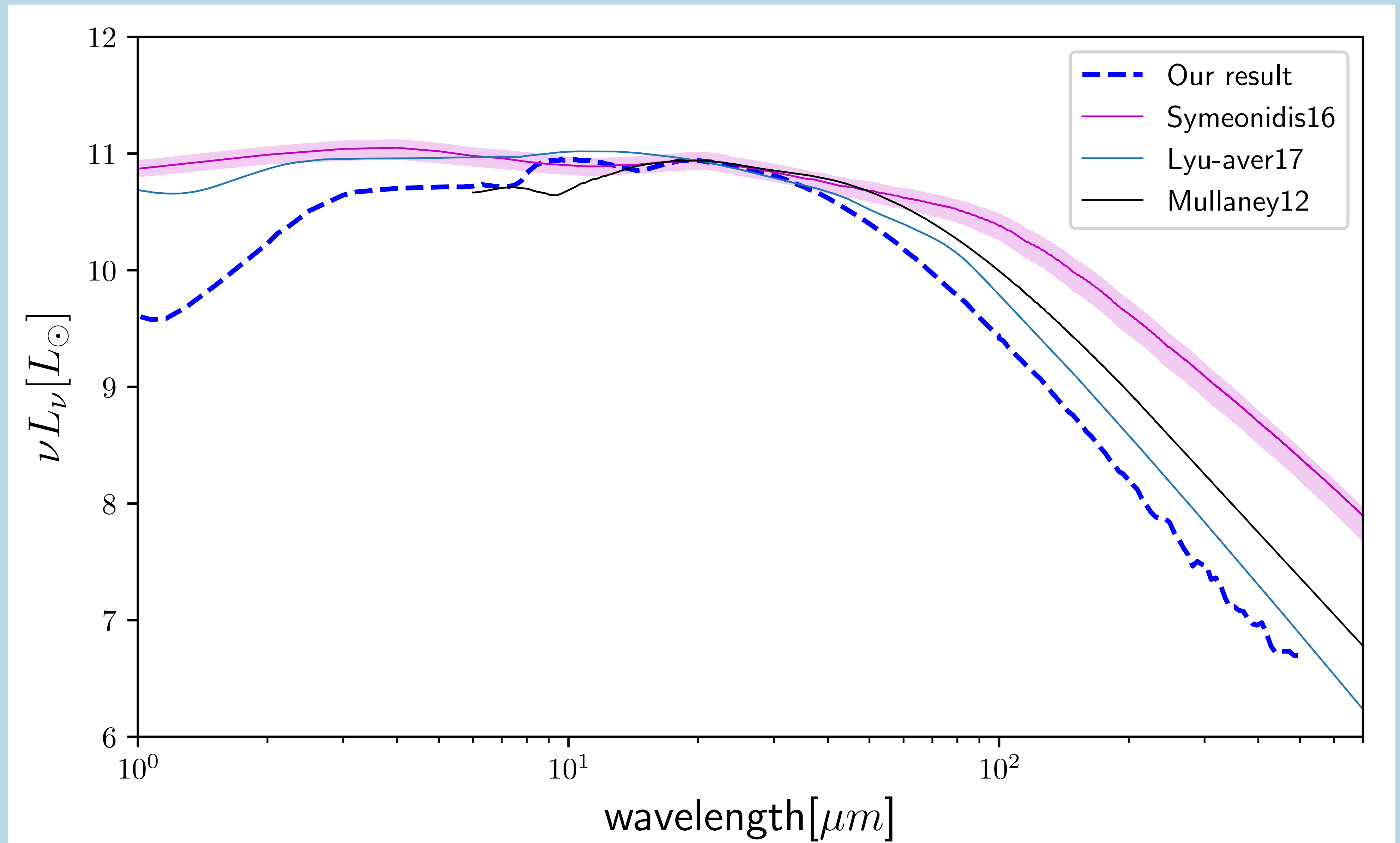
Our AGN SED template is consistent with those of Mullaney and Lyu, but disagree with that of Symeonidis. We independently confirm that the Symeonidis template is strongly biased.

SED Decomposition

Since IR SED of galaxies has been well studied, there are usually two ways to derive the AGN intrinsic IR SED.

- Determine galaxy contamination via unique galaxy signature (e.g. PAH); Then subtract galaxy component from the total observed SED (Symeonidis et al. 2016; Lyu et al. 2017; Lani et al. 2017).
- Use AGN templates that cover a large fraction of the AGN parameter space, and combine with a branch of galaxy templates to do decomposition.

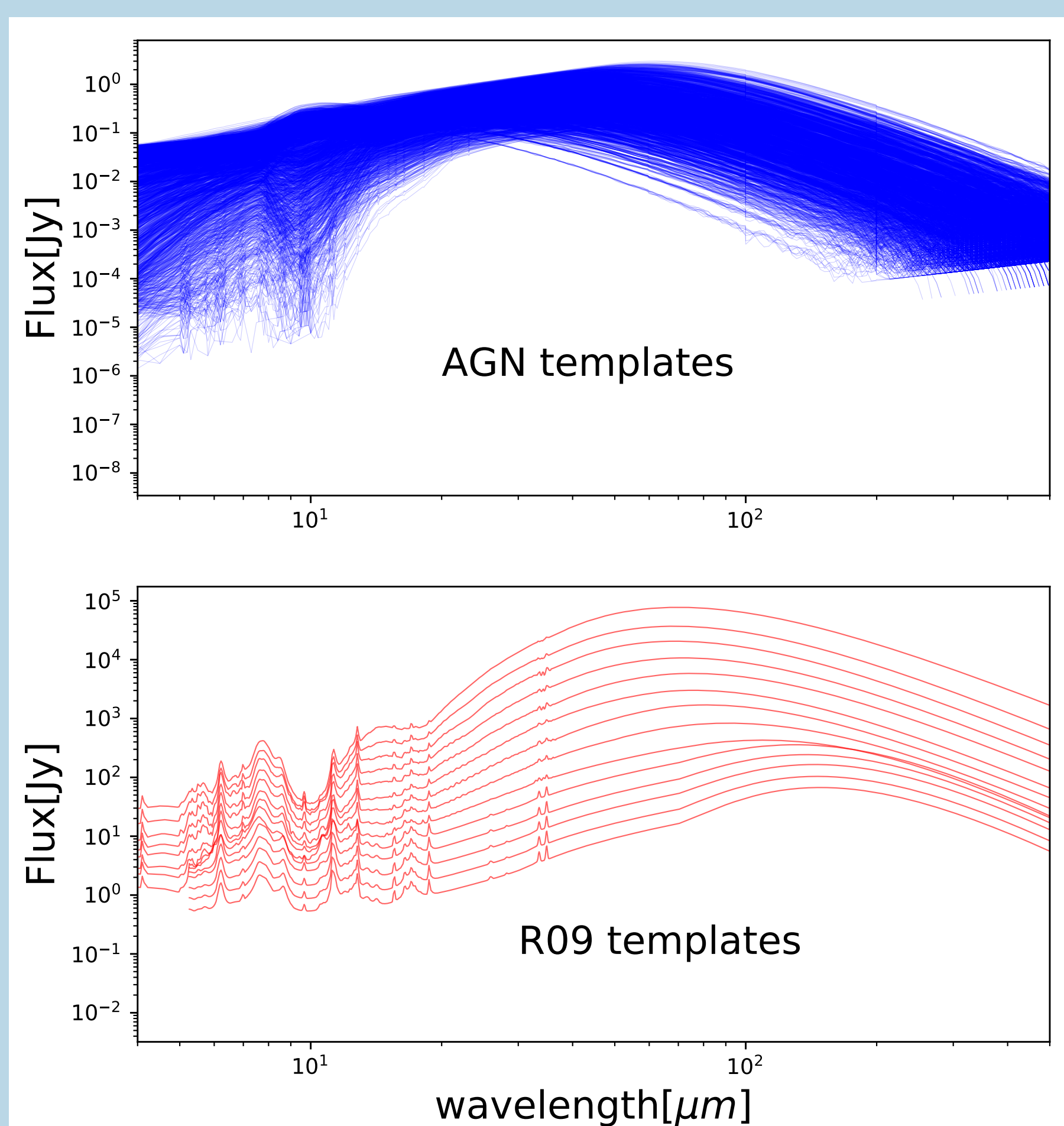
For the former method, it is not easy to find accurate galaxy emission indicator. For the latter one, the resulting AGN SED is often model dependent. Here we use the latter one.



AGN and Galaxy templates

AGN templates We use the 3600 AGN templates provided by Siebenmorgen et al. (2015). **This template library covers a wide range of the AGN parameter spaces.**

Galaxy templates We use three galaxy templates sets here. Dale & Helou (2002; hereafter DH02), Dale & Helou (2014; hereafter DH14) and Rieke et al. (2009; hereafter R09).



PAH fluxes

The ratio of PAH to FIR continuum is model dependent. We also confirm that the R09 template library is consistent with observations.

