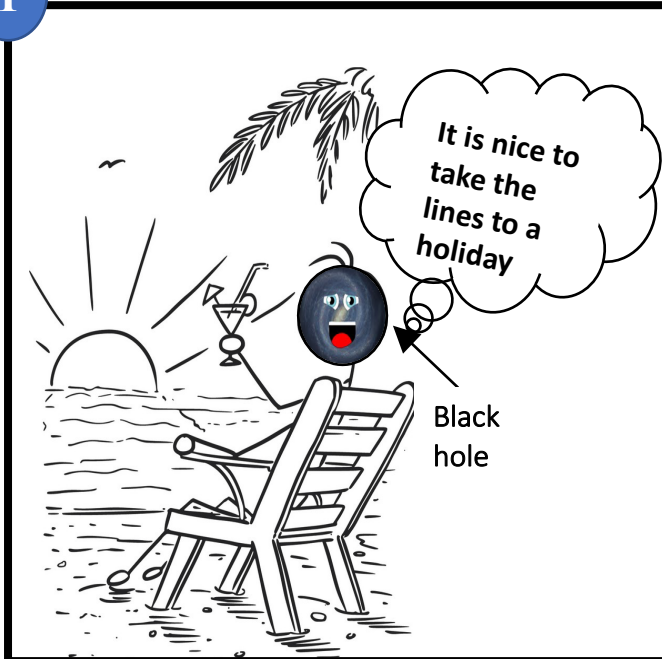


Paradox in pan-spectral observations of NGC5548

Maryam Dehghanian

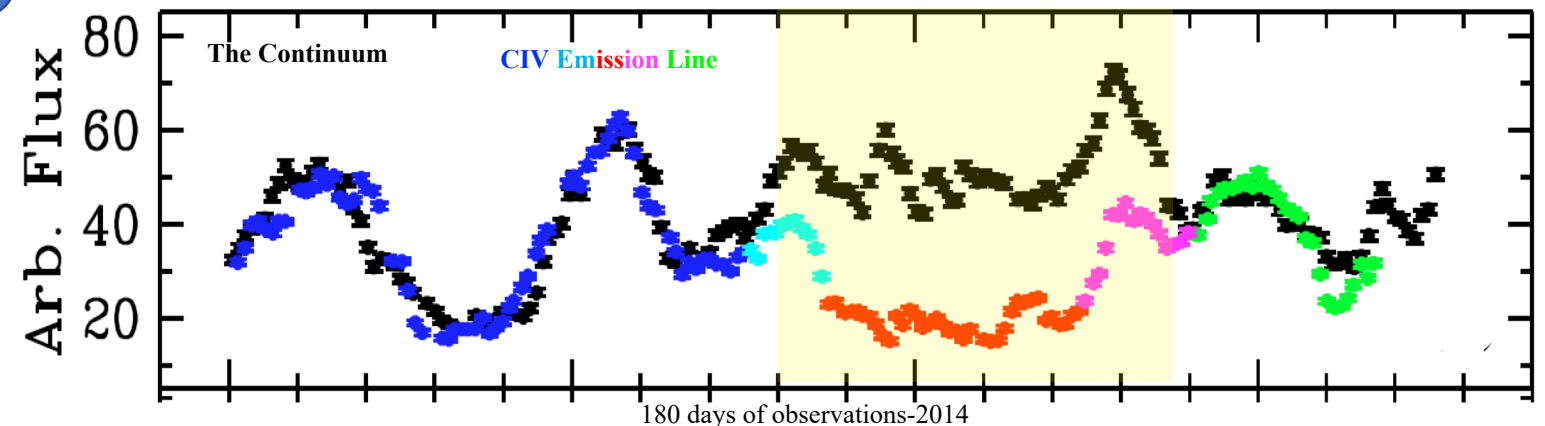
1



2

- A decorrelation between the emission/absorption lines and the continuum :The holiday
- Violates the basic assumption for BH mass estimations
- Why? How?

3



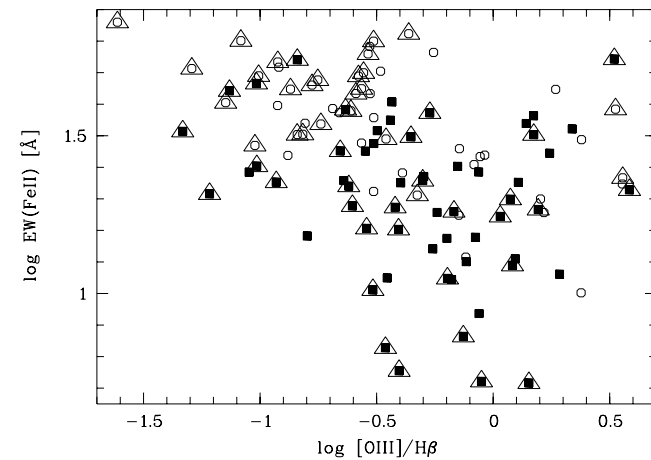
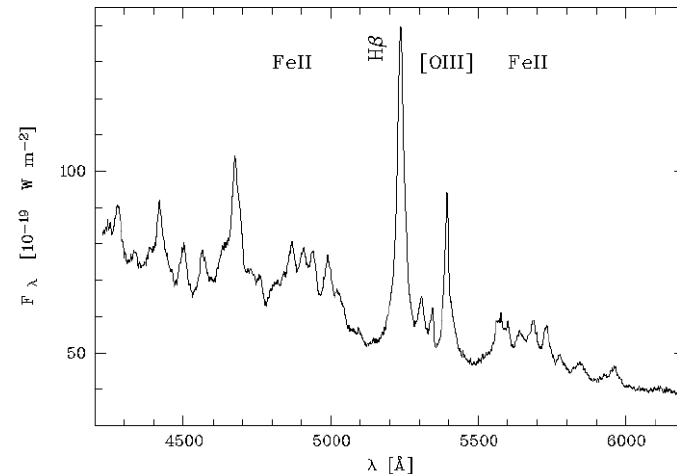
4

A disk-wind explains everything!

Narrow Line Seyfert 1 Galaxies

by Dirk Grupe

- NLS1s are AGN with low Black Hole masses and high L/L_{edd}
- Extreme X-ray variability and spectra
- Possibly AGN in an early stage
- On an extreme end of the Boroson & Green EV-1 relation (1992)
- Anti-correlation between optical FeII and [OIII] emission line strengths.
- Cloudy may help us to better understand the differences between NL and BL Seyfert 1s.
- For example: Starburst vs AGN component

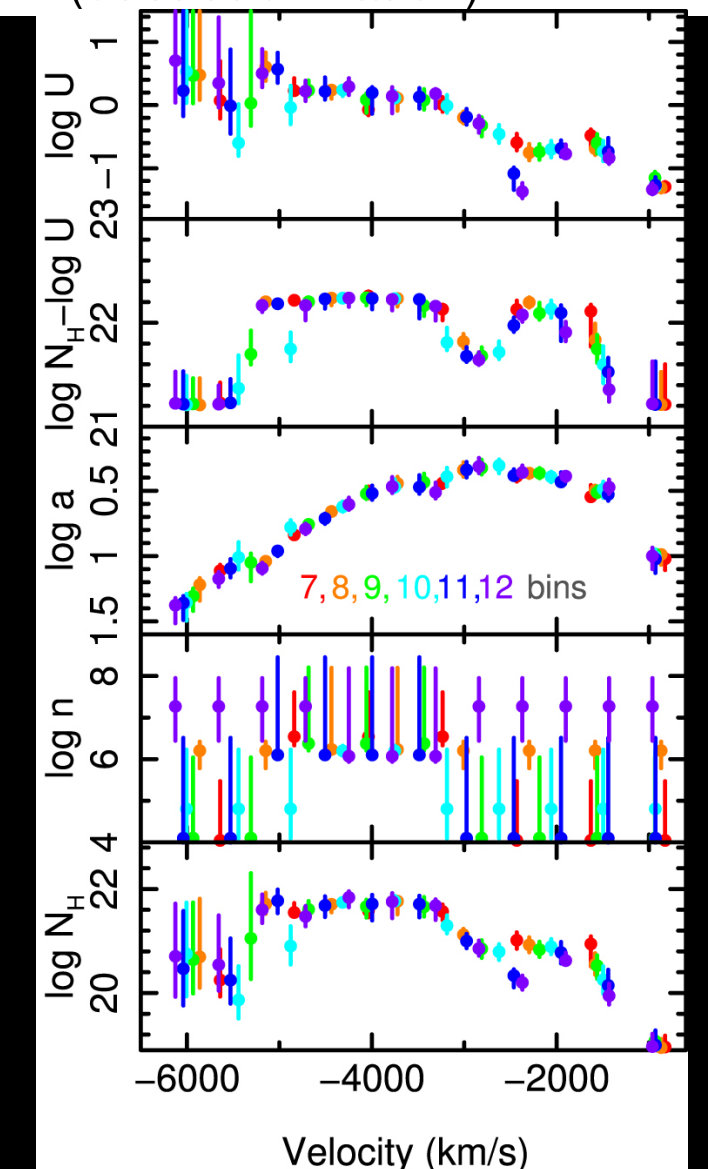
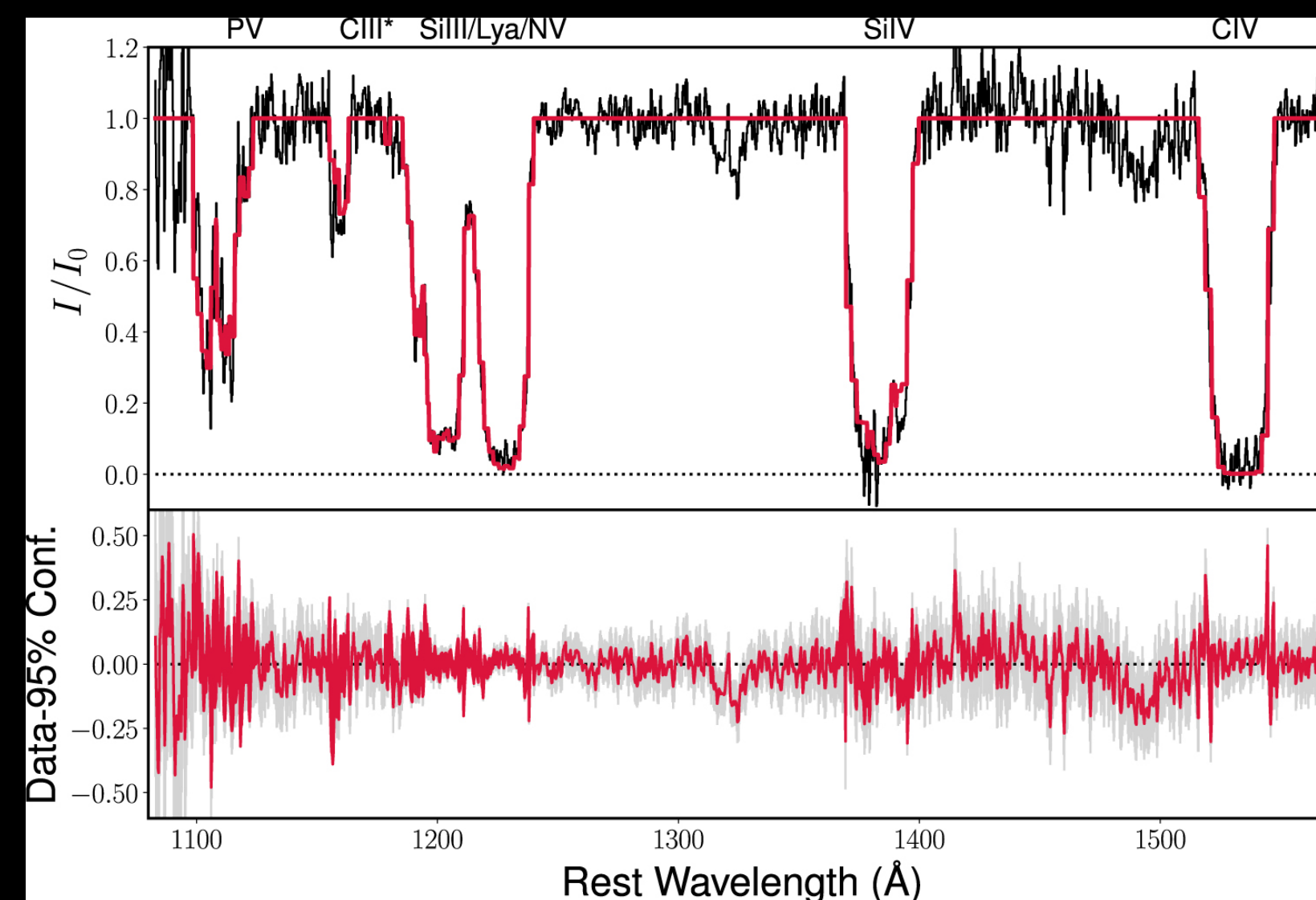
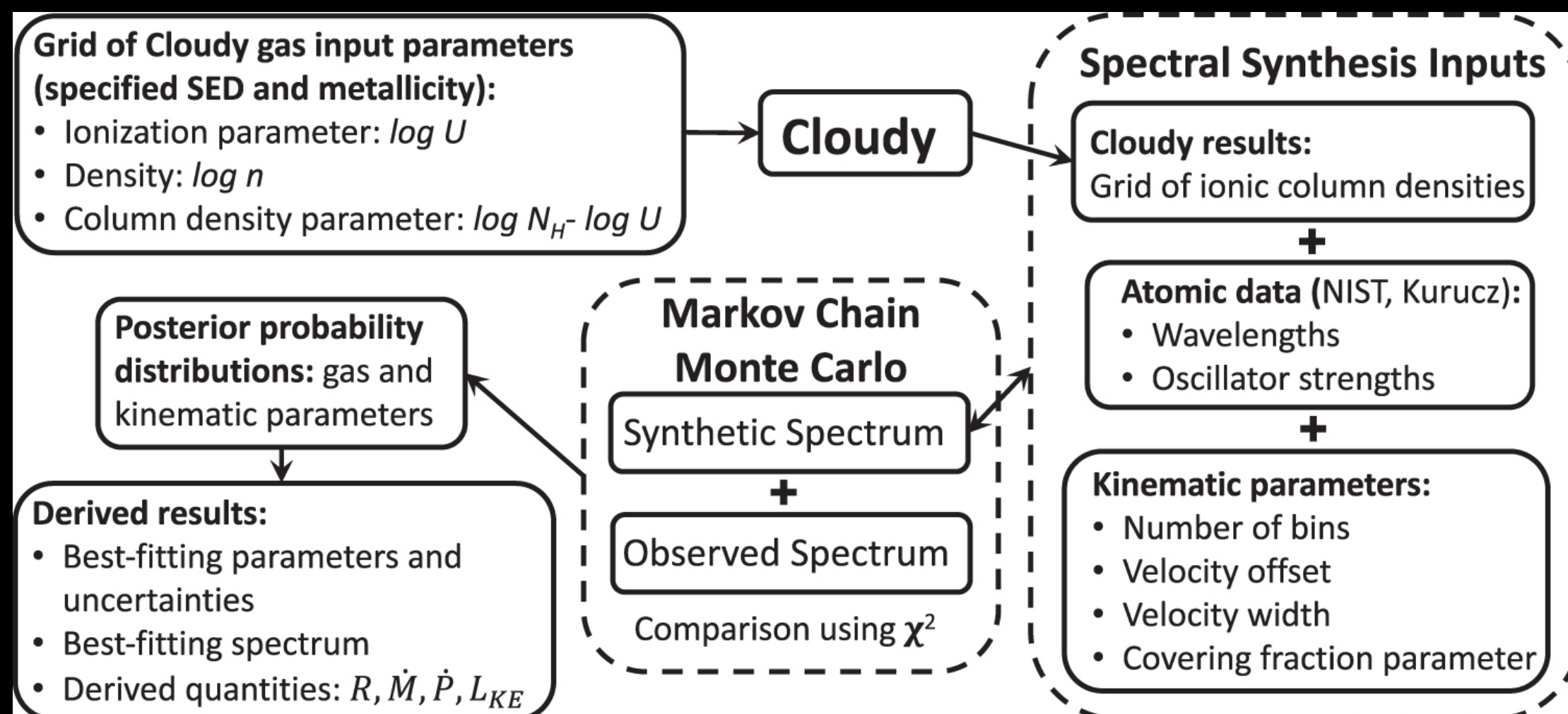
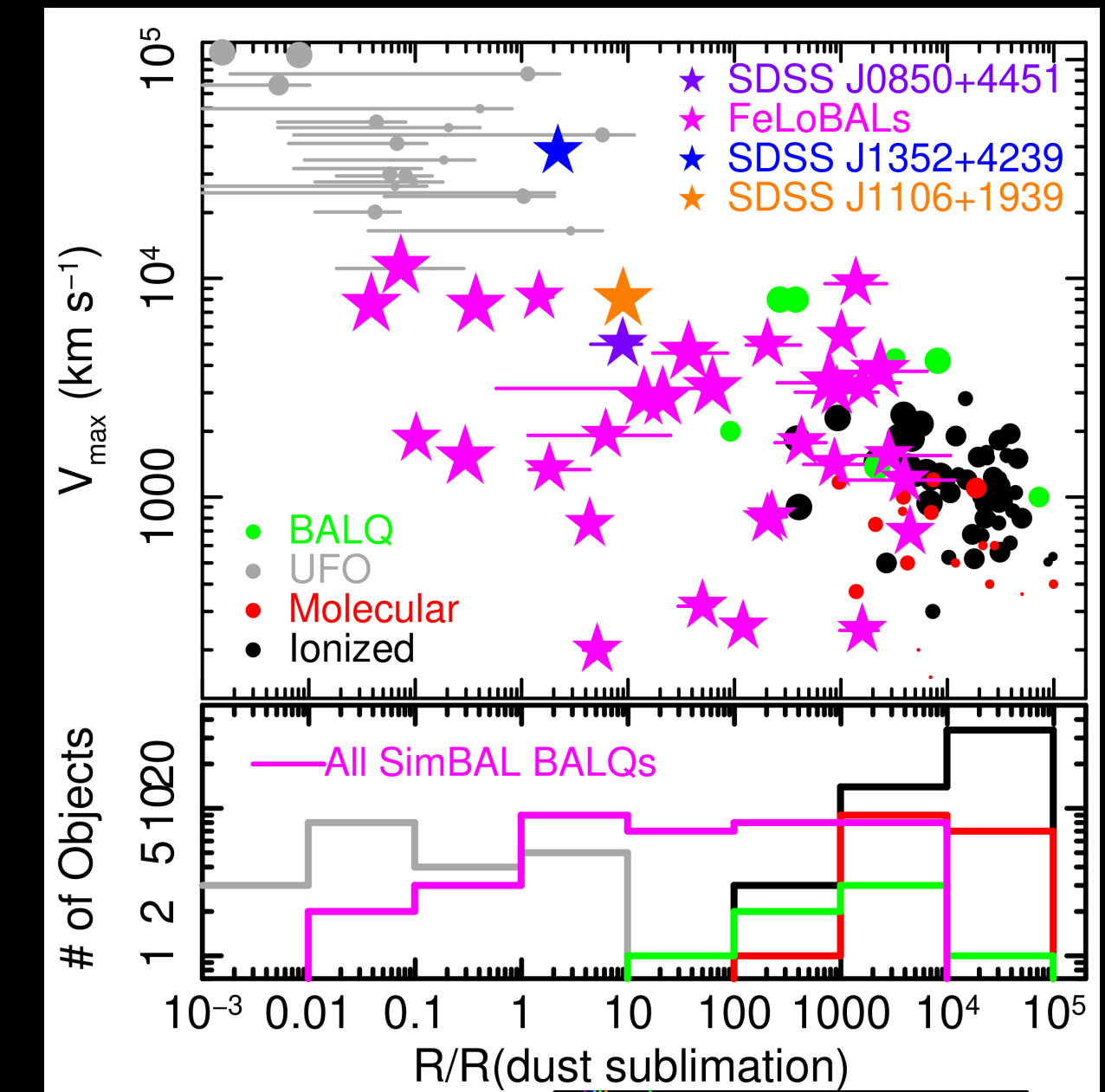


Grupe 2004, AJ

SimBAL: Spectral-Synthesis for Broad Absorption Line (BAL) Quasars

Joseph Hyunseop Choi, OU

- 20 ~ 40% of quasars show BAL features from quasar outflows.
- Strong quasar feedback candidate, but their physical properties are not well constrained.
- *SimBAL* models BAL quasar spectra and provides best fit parameters and the associated uncertainties.
- With *SimBAL* (and *Cloudy*), we can perform the first systematic study of BAL quasar outflows.



AGN feedback from QSO absorption lines

Vivek Mariappan

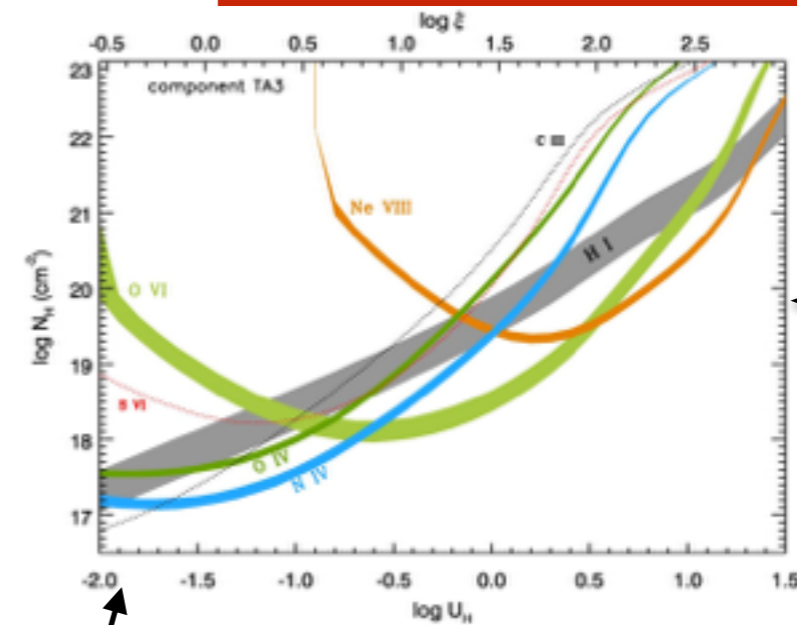
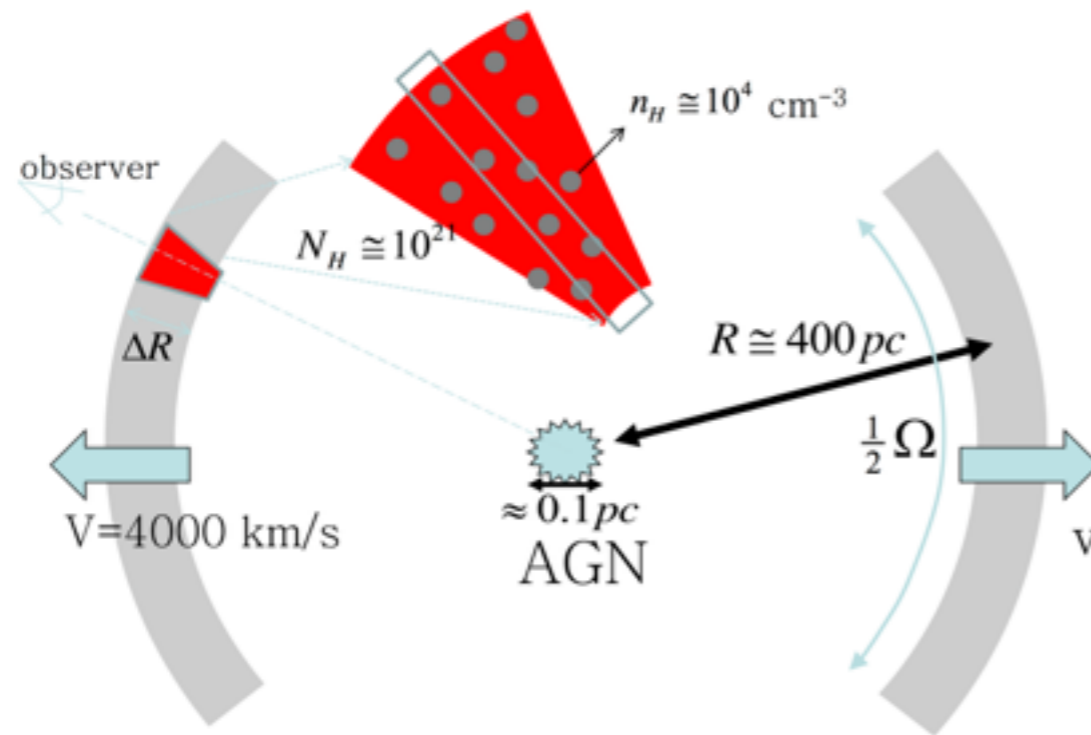


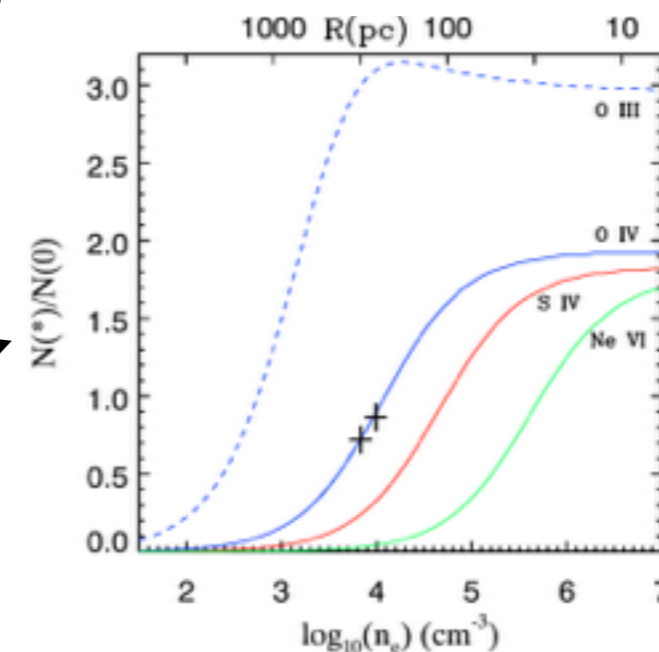
Photo ionization modeling to solve for N_H and U

Kinetic Luminosity : $\dot{E} = 4\pi\mu m_p \Omega R N_H v^3$, **1 % L_{bol}**

Mass outflow rate: $\dot{M} = 8\pi\mu m_p \Omega R N_H v$, **100 M_{sun}/yr**

- Reliable measurements of N_{ion}
- Photoionization modeling to convert N_{ion} to N_H and U
- Number Density via Troughs from metastable levels
- Distance of the Outflow from the Central Source:

$$U_H \equiv \frac{\Phi_H}{n_H c} = \frac{Q_H}{4\pi R^2 n_H c}$$



Fine structure lines to estimate electron density

CLOUDY

NGC 1566: A Temperamental Changing Look AGN

Becca Mikula

- 40 Mpc, located in Dorado group
- Triggered INTEGRAL in June 2018 with Swift follow up
- Continued monitoring campaign sees changes in AGN classification- broadening and narrowing of H α and H β lines
- Flare showed jump of around 3 mag in Swift W2 band and X-ray
- On steady decline currently

