FMOS試験観測のデータ解析（III）：輝線フラックスのS/N評価

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Abstract

- We analyze FMOS ER data in Dec. 2009, and…
  - Check FMOS spectra including emission-line.
  - Estimate FMOS emission-line sensitivity.
  - Discuss uncertainties of redshift measured from emission-line detected by FMOS.

FMOS Feasibility Study (Emission Line)

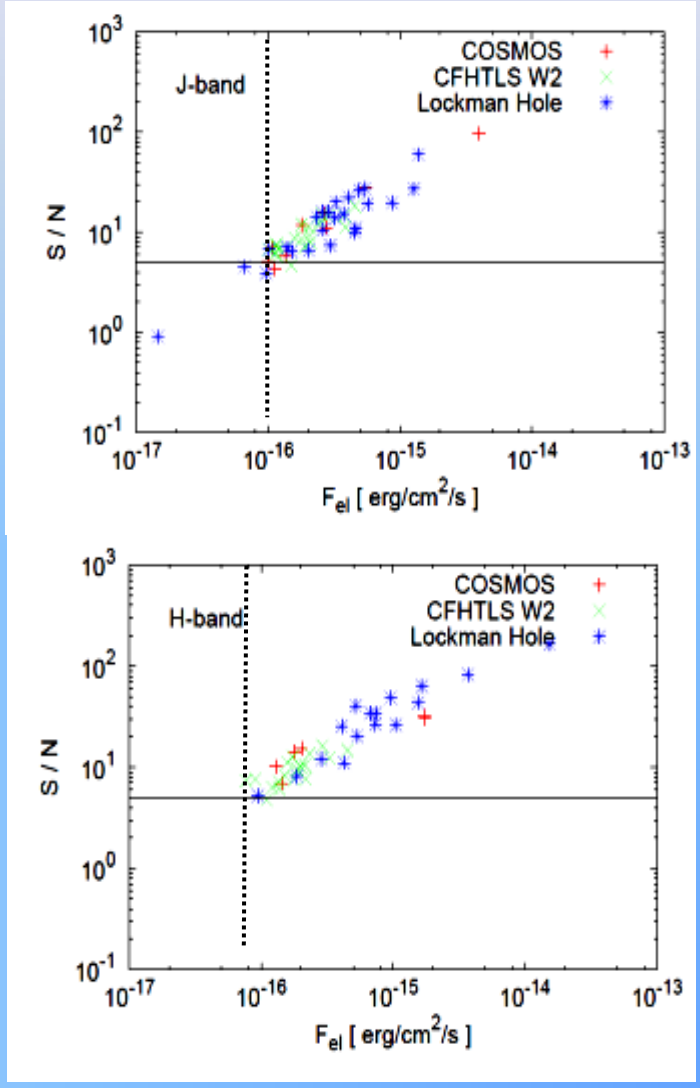
- Data Set:
  - COSMOS: exp. time = 45min (BS-mode)
  - CFHTLS W2: exp. time = 90min (BS-mode)
  - Lockman Hole: exp. Time = 90min (CBS-mode)

- Data Analysis:
  - Estimate emission-line flux by Gaussian-fitting
  - Only use data in J-band (λ=1.1-1.35) & H-band (λ=1.4-1.7), because of less sensitivities
  - Estimate noise by using 1d-spectra around emission-line

⇒ Estimate S/N of emission-line !!

Emission-Line Sensitivity

- FMOS sensitivity (1hr, S/N=5)
  - J: 1.0e-16 erg/cm2/s
  - H: 0.9e-16 erg/cm2/s



Redshift Uncertainty

- Redshift dispersion is due to resolution (R=500).