◎ Massive data sets (higher-z, higher statistics,,,) will be ready within some years.

Healthy, mutual feedbacks between theory and observations

◎ “What are the data telling us?”

e.g. If **A** at high-*** end is observed,
then it indicates either **B**, **C**, **D**, **E** or **F**.
If **G** at low-*** end is observed, then **C**, **E**, **F**, **H** or **I**.
If the *** slope is steeper than ***, then **E**, **F**, **I** or **J**.

HSC (+ some spectroscopy) ⇒ Either **E** or **F** is going on.

◎ “What should we observe next?”

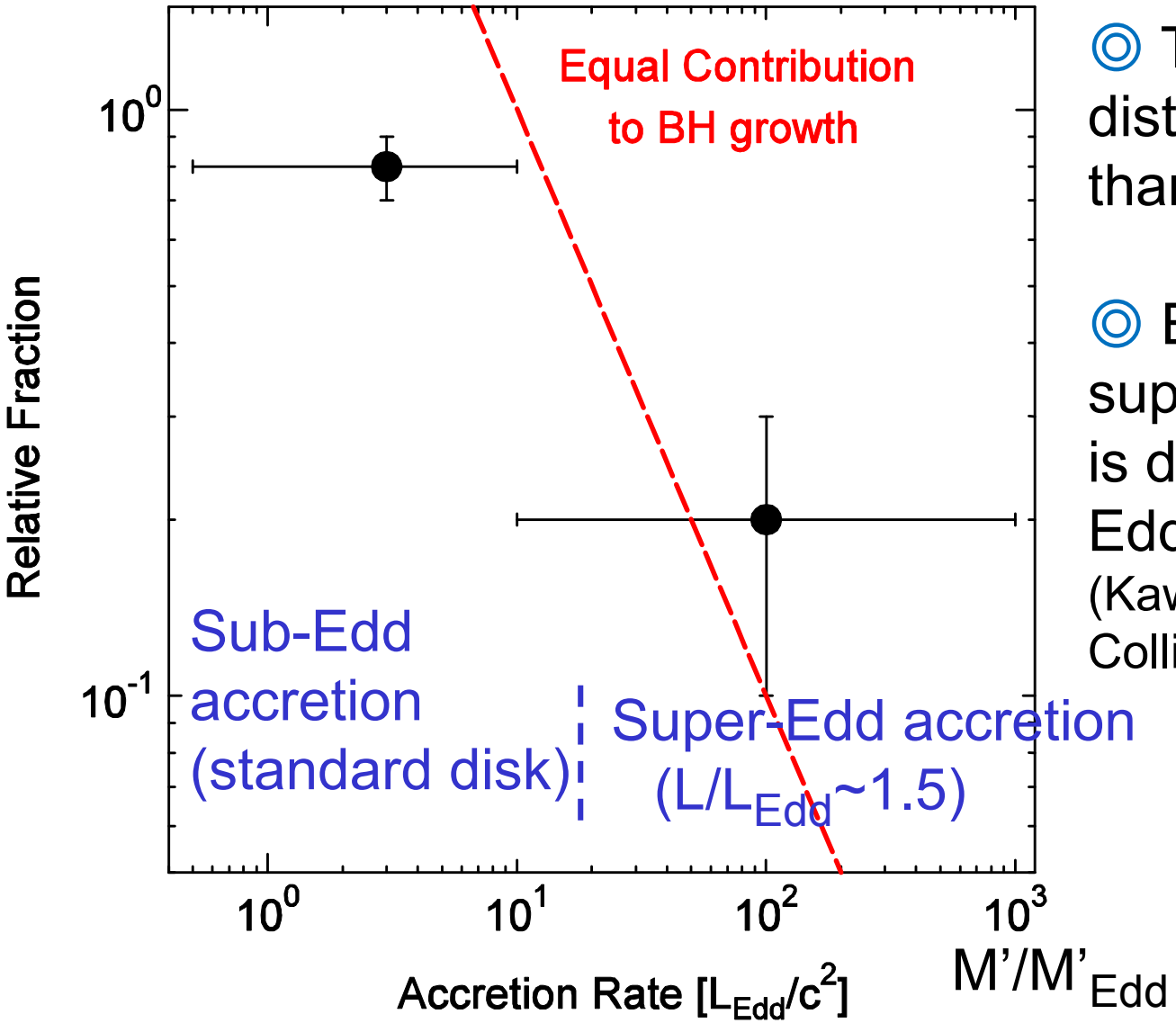
e.g. If **E** is the case, then **K** in the polarized spectrum is predicted.
While, **F** leads to **L** in time variation.

⇒ Further observations will answer which is more promising.

A test to be examined in the HSC era

Eddington ratio distribution:
Which BHs are growing? How massive BHs are formed?

(poster 6)



◎ The observed distribution is shallower than the critical slope.

↓

◎ BH growth via super-Eddington phase is dominant over sub-Eddington growth.
(Kawaguchi, Aoki, Ohta, Collin 04)

◎ Super-Eddington accretion is more common at higher redshifts.

(McLure & Dunlop 04; see also Nobuta, Akiyama, Ueda et al. 12)

⇒ Massive BHs were formed via super-Eddington accretion.

(Kawaguchi et al. 04)

⇒ Immediate prediction is that there are SMBHs at very high-z.

◎ Search for z > 7 QSOs

(talks by Imanishi-san, Kashikawa-san, Y.Matsuoka-san)

"BH growth by Eddington-limited accretion" hypothesis real?

[No (Collin & Kawaguchi 2004)]

◎ I hope that HSC will discover massive BHs at z > 7.