

**ALMA Observation of a Protoplanetary Disk around HD 142527 II:
Disk Model**

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Takayuki Muto (Kogakuin U.), Misato Fukagawa (Osaka U.), Takashi Tsukagoshi, Munetake Momose (Ibaraki U.), Tomoyuki Hanawa (Chiba U.), Kazuya Saigo (NAOJ), Akimasa Kataoka (GUAS), Hideko Nomura, Taku Takeuchi (TITech), Eiji Akiyama, Nagayoshi Ohashi, Hideaki Fujiwara (NAOJ), Hiroshi Shibai (Osaka U.), Yoshimi Kitamura (ISAS/JAXA), Shu-ichiro Inutsuka, Hiroshi Kobayashi (Nagoya U.), Mitsuhiro Honda (Kanagawa U.), Yusuke Aso (Tokyo U.), Sanemichi Takahashi (Kyoto U.)

Herbig Fe star HD 142527 ($d \sim 140$ pc, $M \sim 2M_{\odot}$) is known to harbor a protoplanetary disk with unique structures. ALMA has revealed a number of interesting features in this system such as strong azimuthal asymmetry in bright ($T_b \sim 24$ K) dust continuum emission and possible fast radial flows in optically thick gas emission. (Casassus et al., 2013, Fukagawa et al., 2013). In the 2013 Autumn JAS meeting, we presented the first results of ALMA observations of this object.

In this talk, we present detailed analyses of the observation data and subsequent modeling efforts. We focus on the radial profiles where the continuum is the brightest (Northern Side) and the faintest (Southern Side), and derive the density and temperature structures that are consistent with the observations. It is indicated that the distribution of gas is more radially extended and is much more axisymmetric than that of dust. Gas-to-dust ratio varies with the location of the disk, and may reach the order of unity in the Northern Side.