

U18a      **CO luminosity - line width correlation of sub-millimeter galaxies**

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A possible correlation between CO luminosity ( $L_{\text{CO}}$ ) and its line width has been suggested in the literature. However, such claims were often based on a small, or heterogenous sample of galaxies. The existence of the relation was uncertain.

By compiling a large sample of galaxies with CO detections from the literature, we carefully examine the correlation. After carefully evaluating the selection effects and uncertainties such as inclination and magnification via gravitational lensing, we show that there exist a weak but significant correlation between  $L_{\text{CO}}$  and its line width.