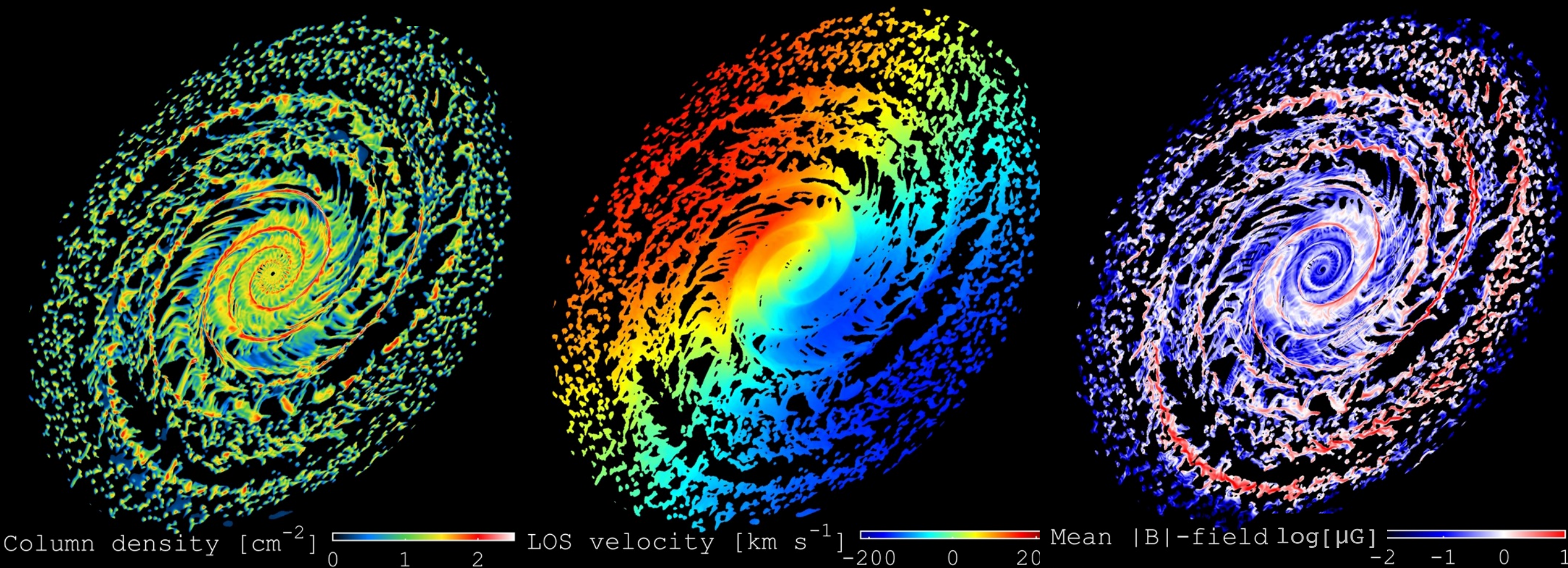


# Rotation of molecular clouds at galactic scale simulations

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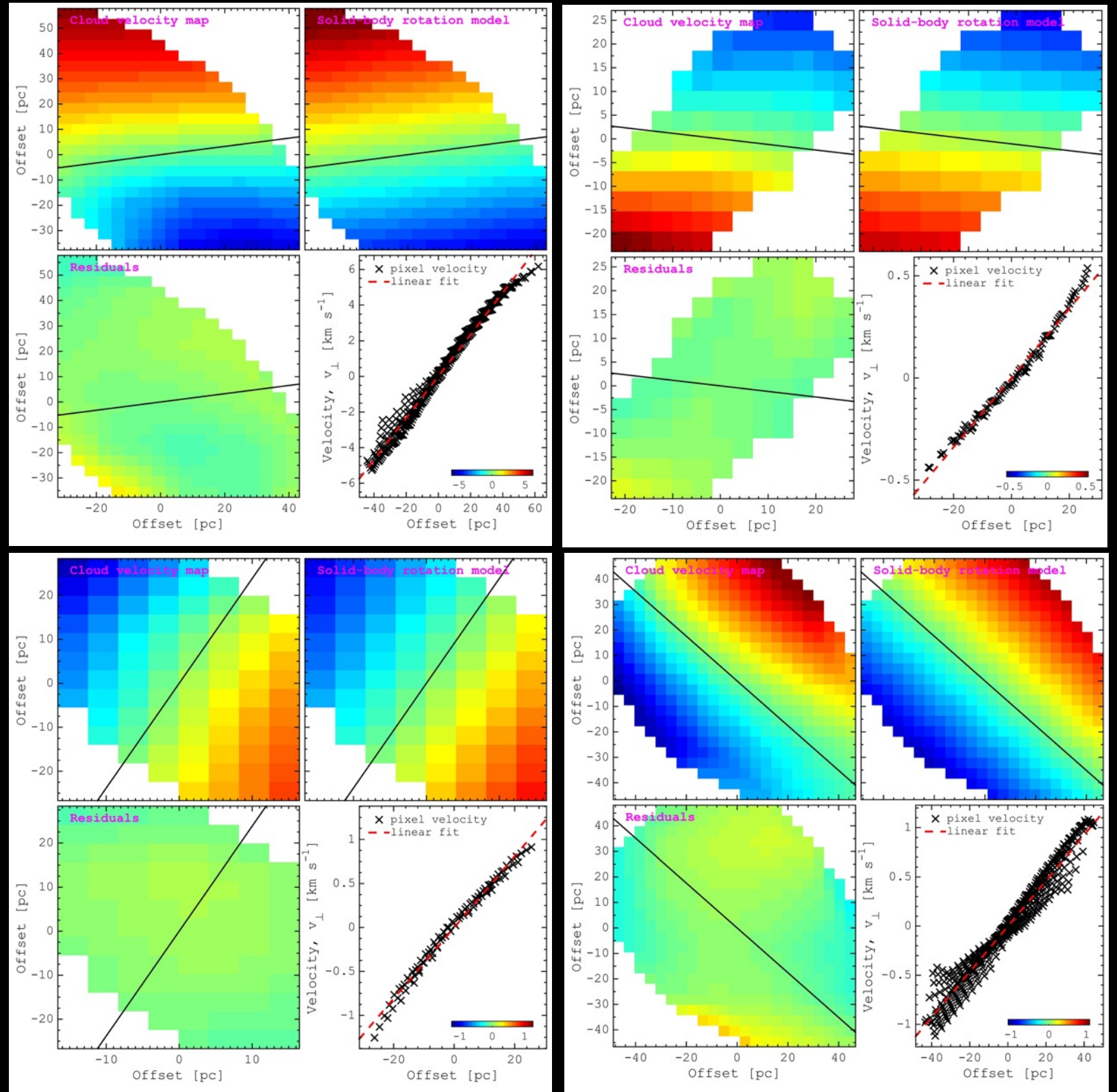
Animation: <https://goo.gl/xt4oQz>



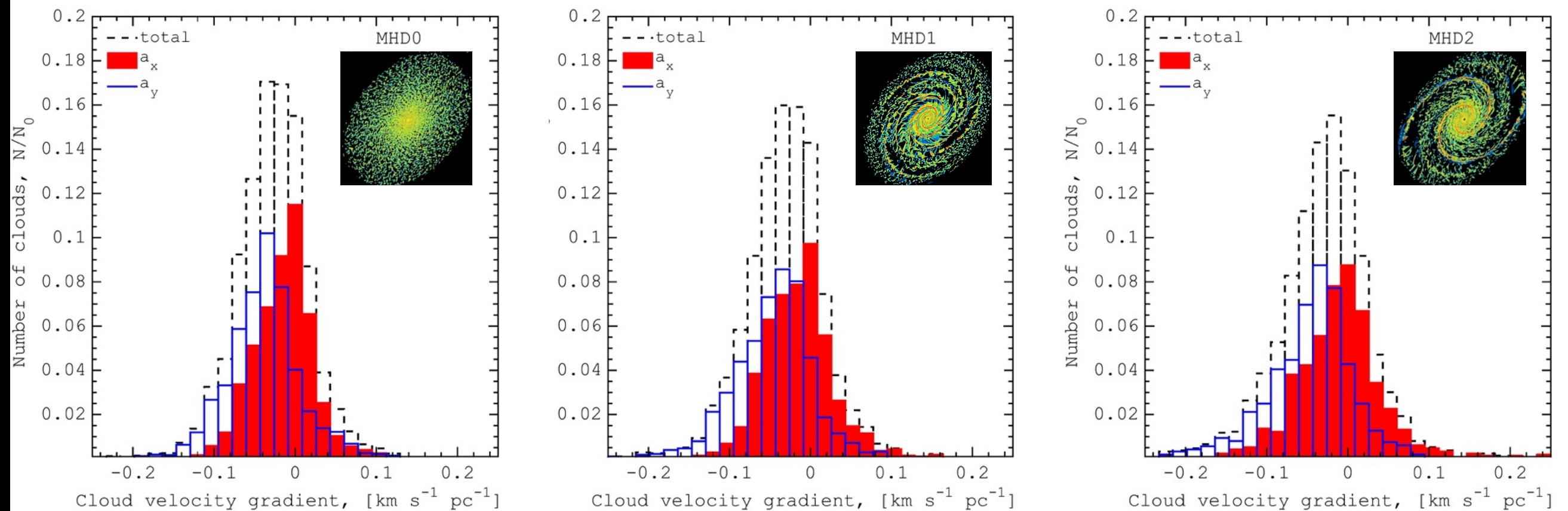
# Velocity fields of isolated GMCs

- Galaxy scale MHD simulations with different galactic morphology
- Selected  $\sim 1000$  isolated clouds with GMC-like scaling relations at 500 Myr
- Analysis of the velocity field of each isolated GMC
- Solid-body rotation fitting (4 different clouds in right):  

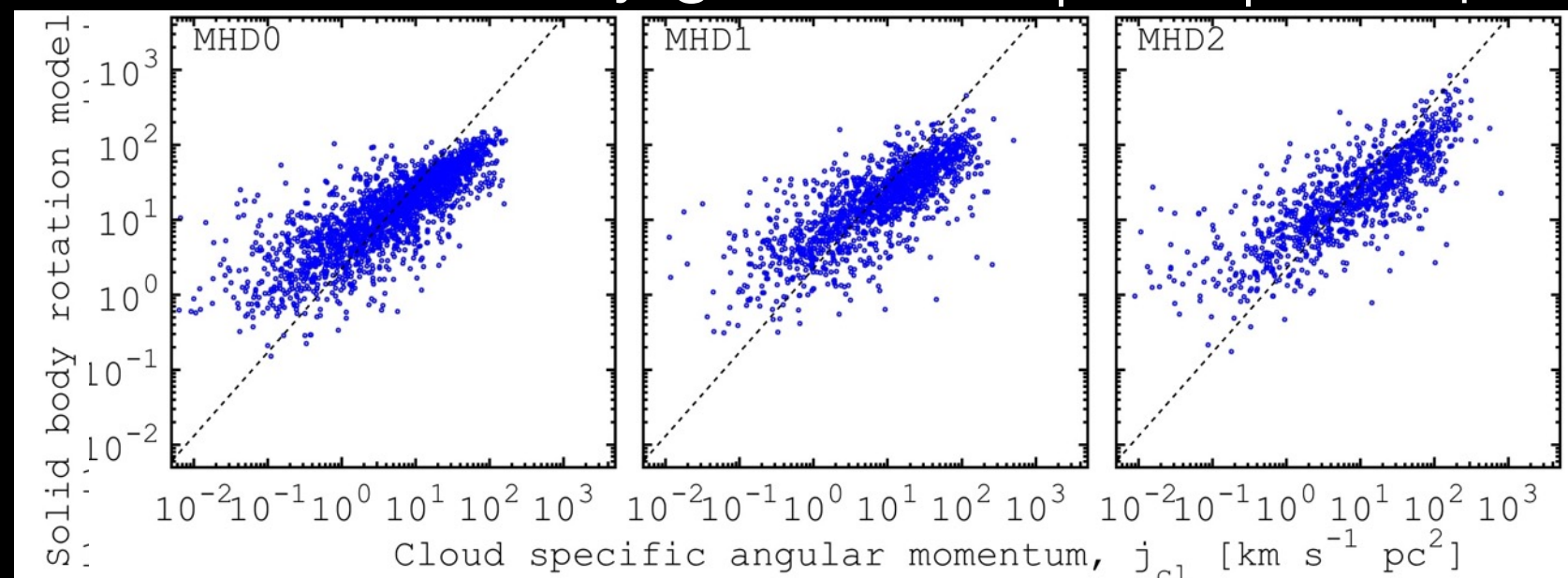
$$V_{\text{los}} = a_x x + a_y y$$
- Majority ( $\sim 70\%$ ) of clouds demonstrate solid-body rotation



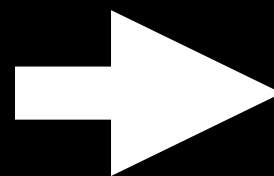
# Velocity fields gradients



Small LOS velocity gradient of  $|0-0.2| \text{ km/s/pc}$



Solid-body rotation model correlates  
with cloud specific angular momentum



Velocity gradient is a  
signature of a cloud rotation