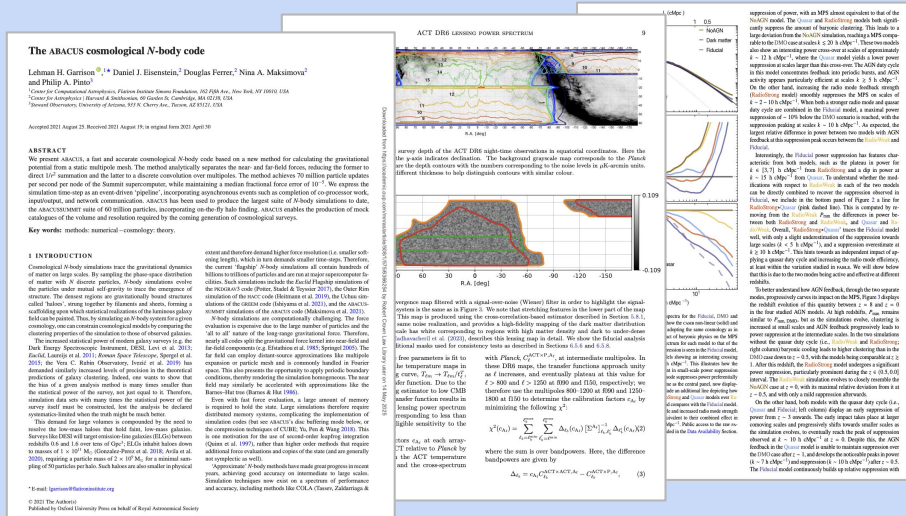


# full manuscript of research paper



# dataset access

NGC1300-0.89asec_MAPS.fits	1.42 GB	LFS
hsp_phangs-jwst_jwst_miri_ngc1300_f1000w_v1p0p1_img...	154 MB	LFS
hsp_phangs-jwst_jwst_miri_ngc1300_f1130w_v1p0p1_img...	154 MB	LFS
hsp_phangs-jwst_jwst_miri_ngc1300_f1200w_v1p0p1_img...	154 MB	LFS
hsp_phangs-jwst_jwst_miri_ngc1300_f770w_v1p0p1_img...	154 MB	LFS
hsp_phangs-jwst_nircam_ngc1300_f200w_v1p0p1_img.fits	2.66 GB	LFS
hsp_phangs-jwst_nircam_ngc1300_f300m_v1p0p1_j...	433 MB	LFS
hsp_phangs-jwst_nircam_ngc1300_f335m_v1p0p1_j...	433 MB	LFS
hsp_phangs-jwst_nircam_ngc1300_f360m_v1p0p1_j...	433 MB	LFS

# execution specs

- needs GPU time? ✓
- needs Python? ✓
- needs astropy? ✓

# objective, author-written tasks

**TASK 1:** Calculate the orbital separation evolution during Roche Lobe overflow.

**DIFFICULTY:** 2

**ANSWER:** 300

**TASK 1:** Predict the number of diagonal features in the 4x4 region.

**Y:** 7

**ANSWER:** [0, 0.5]

# LLM agent in code execution environment

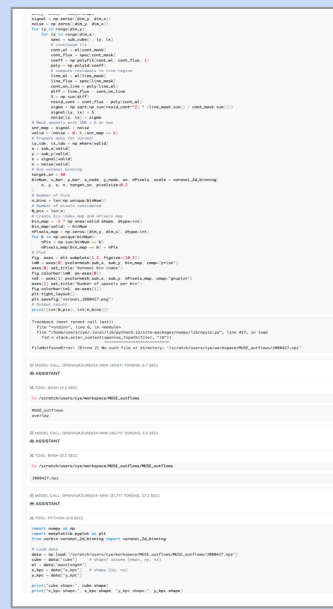
AGENT: I see - the samples are under the 'posterior\_samples' subgroup. Let's access that:

```
# Check available keys in GW200105
print("Checking available keys in GW200105...")
with h5py.File(gw200105_path, 'r') as f:
    model = 'C01:Combined_PHM_high_spin'
    ...
```

AGENT: Now I have a good understanding of the file structure. Let's load all the event data and start implementing the hierarchical Bayesian model.

```
class HierarchicalModel:
    def __init__(self, event_samples, spin_model="ZS", mass_model="1C",
    beta=0):
        """
        Initialize the hierarchical model.
        ...
```

# full trace



# automated grader

paper\_task\_1: ✓

paper\_task\_2: ✗

paper\_task\_3: ✗

paper\_task\_4: ✓

score: 0.50

# qualitative analysis

Instruction Interpretation? ✓

Technical Execution? ✗