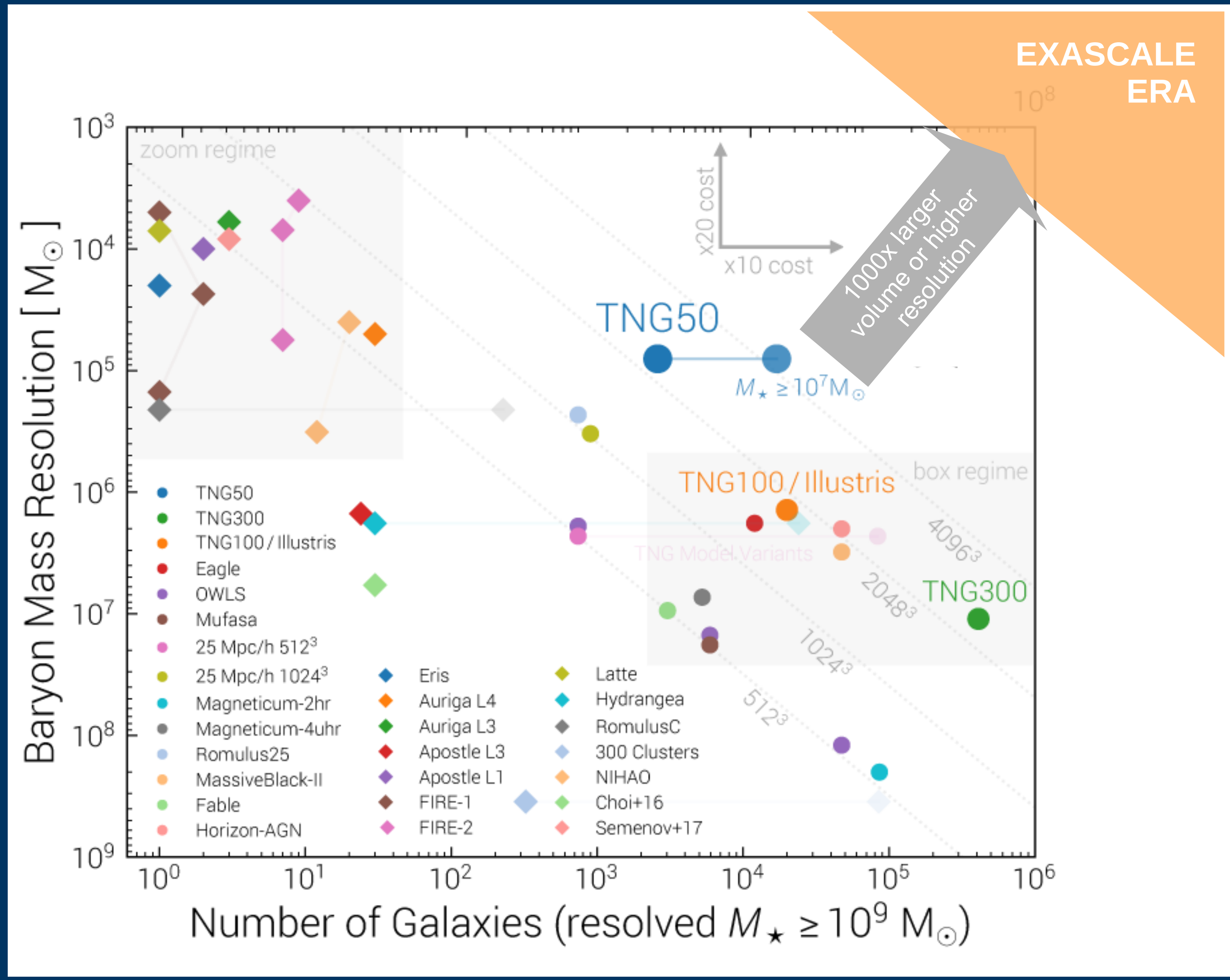
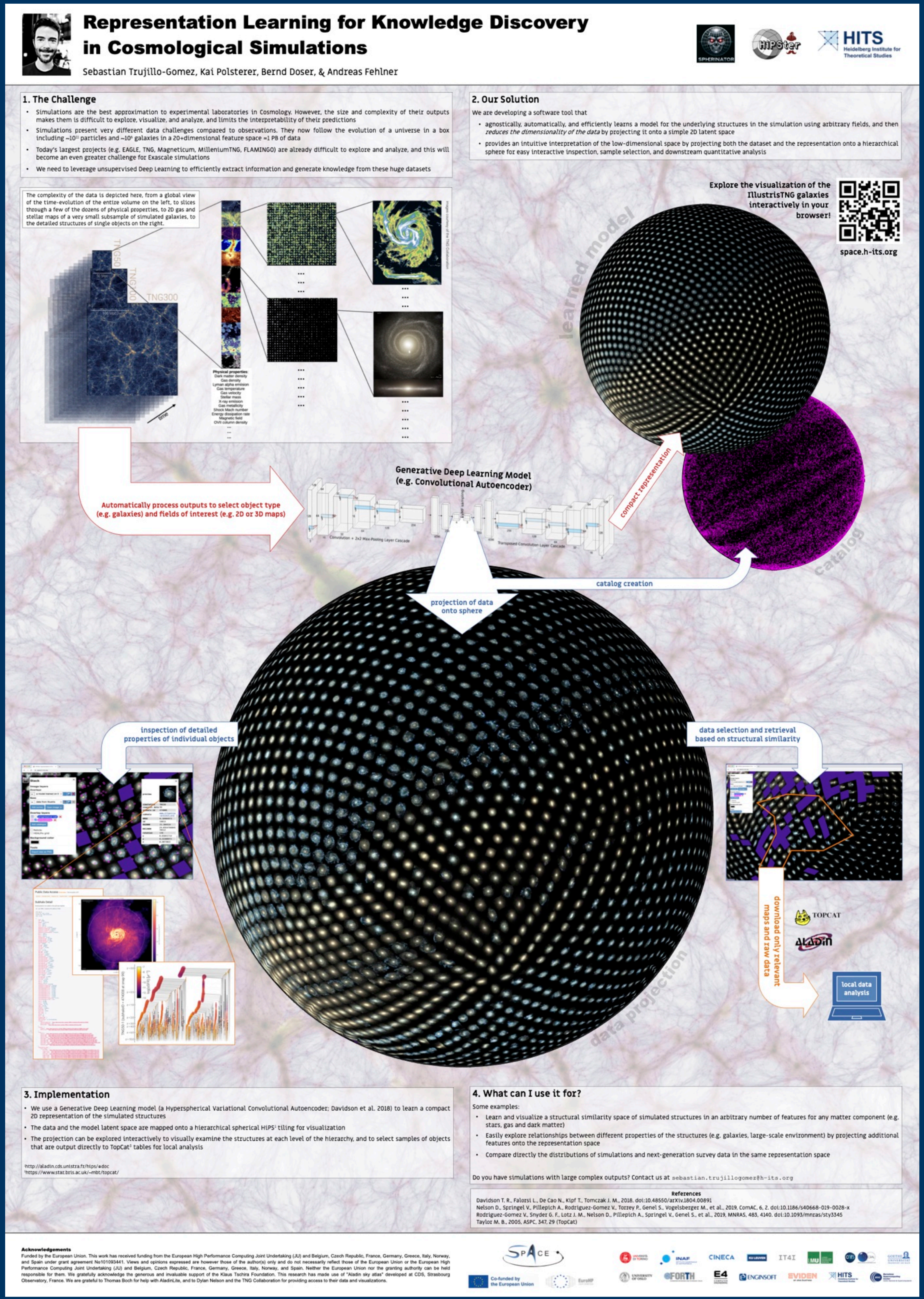
Knowledge discovery in simulations using Representation Learning

- Exploration and analysis of large, high-dimensional datasets from *any cosmological simulation* in preparation for Exascale era
- Similarity space based on the intrinsic distribution of the data
- Browser demo available at `space.h-its.org`





Sebastian T. Gomez (HITS, Heidelberg)

Building Galaxies from Scratch / 22.2.2024 / Vienna

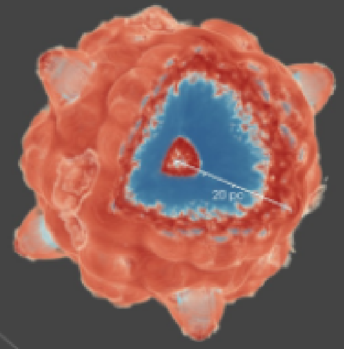
Cloud Formation by Supernova Implosion

Leonard Romano, Manuel Behrendt, Andreas Burkert

New characterization of

radiative stage &

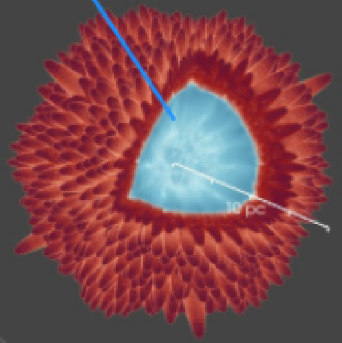
merging with ISM



d) Cloud formation
($t \gtrsim$ few Myr)

$M_{cloud} \sim 10^3 - 10^4 \, M_\odot$

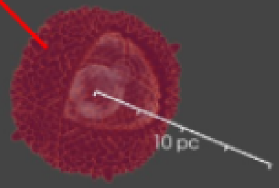
Inflowing Gas



c) Implosion
($t \lesssim$ few Myr)

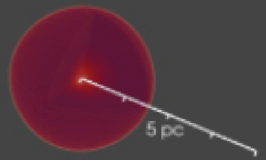
$P_{shell} \sim P_{ISM}$
$\dot{M}_{in} > 0$

Outflowing Gas



b) Momentum Conserving Snowplow
($t \lesssim 20 - 100 \, t_{sf}$)

$P_{shell} \gg P_{ISM}, P_{Bubble}$
$M_{Bubble} \sim 0$



a) Pressure Driven Snowplow
($t < 3 - 5 \, t_{sf}$)

$P_{Bubble} \gg P_{shell} \gg P_{ISM}$
$\dot{M}_{Bubble} < 0$

MAX-PLANCK-INSTITUT FÜR EXTRATERRESTRISCHE PHYSIK

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