SEP Hot+Cold Detection

Detection Image

NIRCam PSF homogenization (to F444W) (§3.1)

Construction of $\sqrt{\chi_+^2}$ detection image (§3.3)

HOT+COLD aperture photometry

Two-stage HOT+COLD detection routine (§3.4)

Aperture photometry on PSF-homogenized images

SE++ Association Runs

Modeling Run (§3.5.4)

Construct 2D models (Sérsic and Bulge+Disk) adopting priors based on HOT+COLD

Group nearby sources and fit joint 2D model to NIRCam bands on sources detected by HOT+COLD

Forced Photometry Run (§3.5.5)

Fix morphological parameters from NIRCam models

Fit for flux in the remaining 30+ bands (*HST*, CFHT, HSC, UltraVISTA, Suprime-Cam, IRAC)

Post Processing

Uncertainty calibration from random apertures (§3.6)

Cleaning and flagging (§3.7)

Data Products

Morphological parameters

(Sérsic, Bulge+Disk, & deep learning morphologies) from NIRCam joint fitting

Model-based photometry

in *JWST*, *HST*, CFHT, HSC, UltraVISTA, Suprime-Cam, and IRAC bands

Circular and Kron aperture photometry

on high-resolution *JWST* and *HST* imaging