Simulated Images with Shapelets (Massey et al. 2003) Flow chart:

Galaxy morphology PDF
Shape, size, magnitude, redshift, colour

Cosmology

Morphology as a fⁿ of colour only possible in HST filters. Need UDF & high-res IR data.

Galaxy evolution

Resample

Decide locations of galaxies on the sky

2pt correlation function of galaxy clustering

Decide locations of stars on the sky

Decide locations of galaxies within image

Dither patter

Decide locations of stars within image

Loop through galaxies one at a time!

Loop through stars one at a time!

Shapelet object maker

Analytic object maker

Cosmology

Weak lensing shear

Cosmology, host galaxy types

Add supernovæ?

Shapelet model of PSF(x,y)

PSF convolution

PSF convolution

Internal telescope distortions

Telescope flexure (x,y,t)

Internal telescope distortions

Pixel size

Pixellate

Dead zone on pixels

Pixellate

Add to image

Add to image

Are there galaxies remaining in new catalogue?

Are there galaxies remaining in new catalogue?

Add noise

Throughput, CCD sensitivity, background, zodie, CRs, confusion limit

Align dithers

Stack dithers

Simage!

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