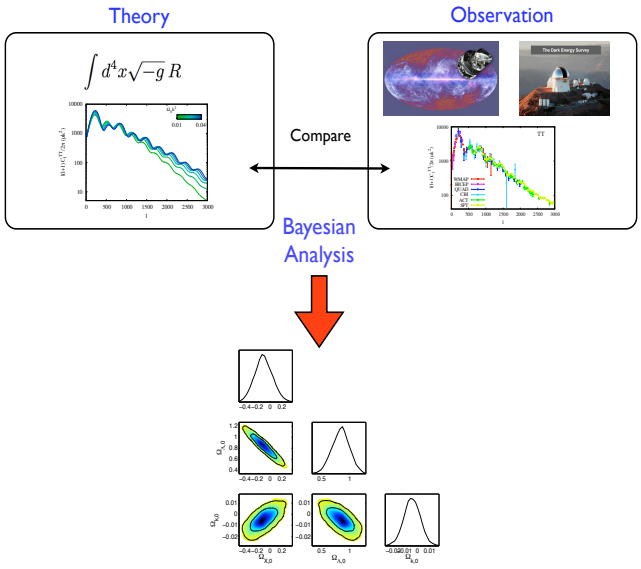
Updated Cosmology

with Python



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In progress

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Homework 11

1.- Show K is a constant, hence the solution

2.- find the first order Euler and Poisson equations

$$\partial_t \vec{v} + H\vec{v} = -\frac{1}{a\bar{\rho}}\nabla\delta P - \frac{1}{a}\nabla\delta\Phi.$$

$$\nabla^2\delta\Phi = 4\pi G a^2\bar{\rho}\delta.$$

3.- If we move to the Fourier space, and with the previous equations, find the Jean's equation:

$$\partial_t^2\delta + 2H\partial_t\delta + w^2\delta = 0,$$

with

$$w^2 = \frac{c_s^2 k^2}{a^2} - 4\pi G\bar{\rho}.$$