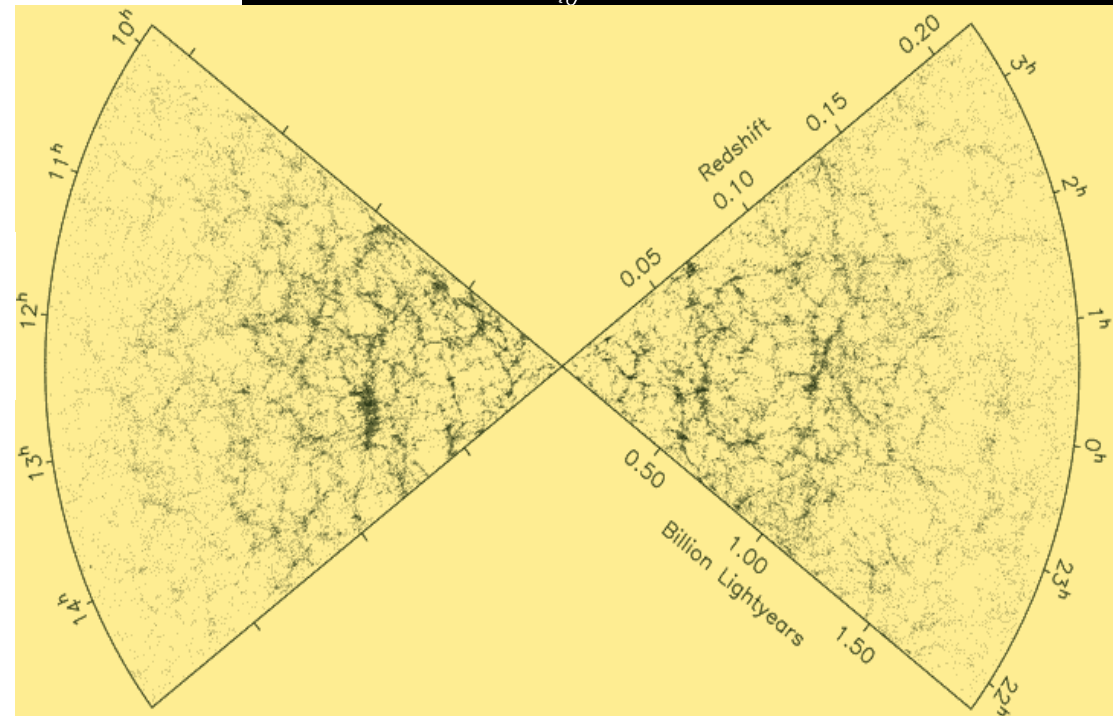
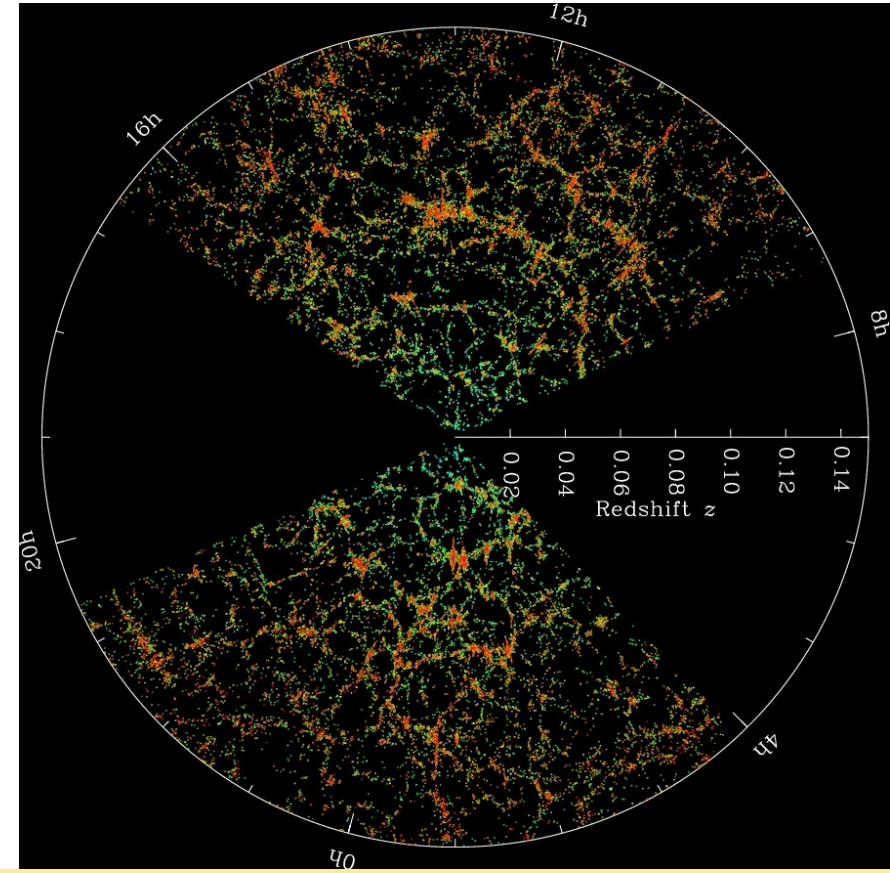


- Sloan Digital Sky Survey (SDSS): sijainnit ja punasiirtymät 930000 galaksilta
-
- 2dF: 221414 galaksia



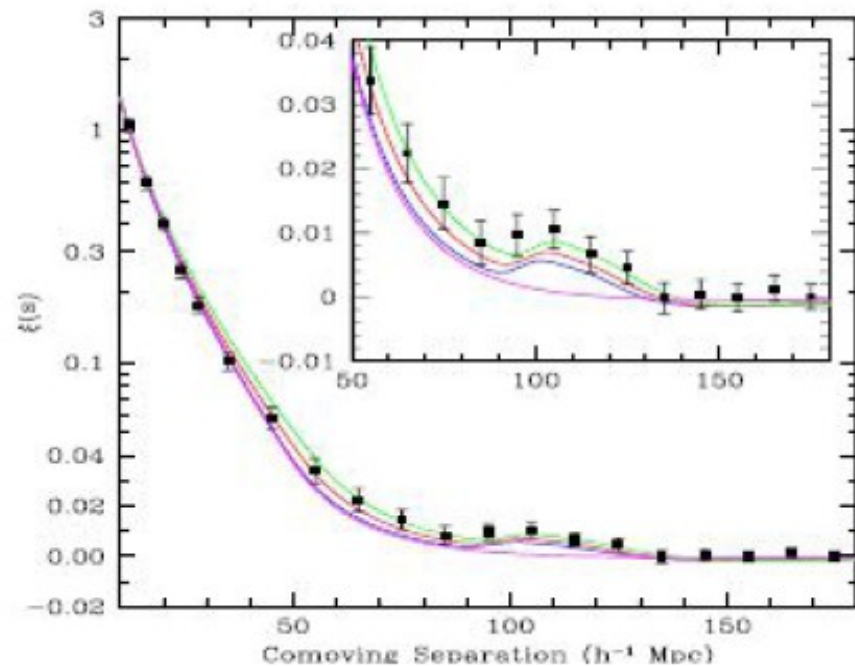
$$w(z) = \int_0^z \frac{dz'}{H(z')} = H_0^{-1} \int_{\frac{1}{1+z}}^1 \frac{dx}{\sqrt{\Omega_0(x-x^2) - \Omega_\Lambda(x-x^4) + x^2}}$$

$$\Omega_0 = \Omega_m + \Omega_\Lambda$$

Korrelaatiofunktio

$$\delta P = n\delta V[1 + \xi(r)]$$

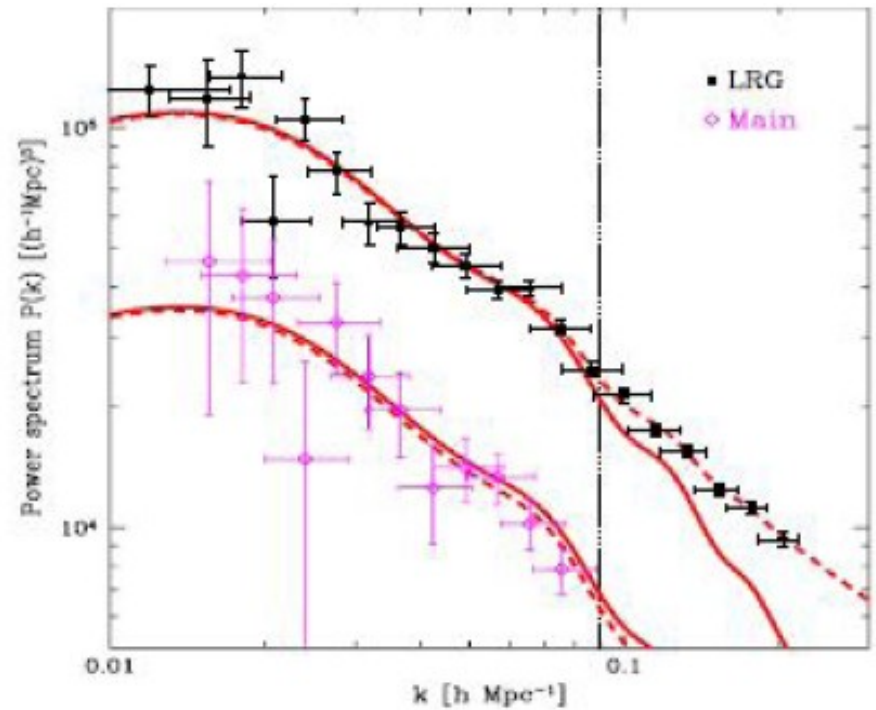
$$\xi(r) = \frac{DD(r) - 2DR(r) + RR(r)}{RR(r)}$$



Tehospektri

$$\xi(\vec{r}) = \int P(\vec{k}) e^{-i\vec{k}\cdot\vec{r}} \frac{d^3k}{(2\pi)^3}$$

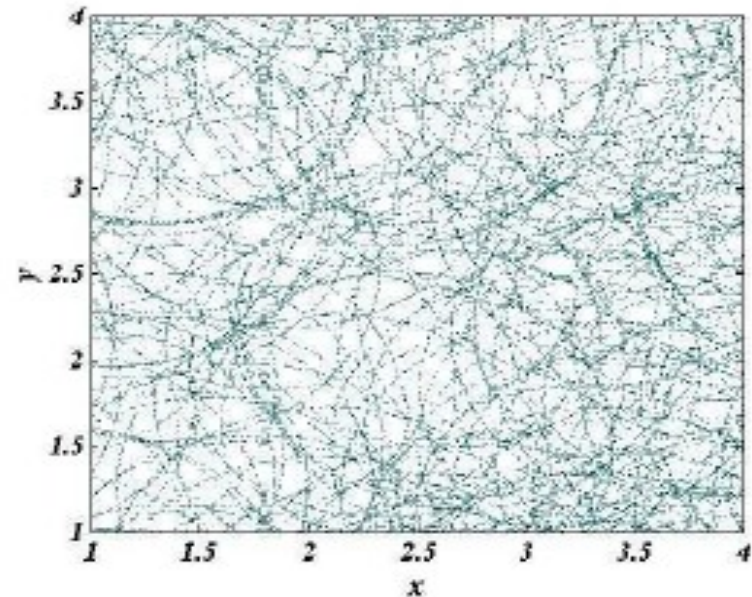
$$P_{gal}(k) = b^2(k, z) P_{DE}$$



BAO

- Baryoni-fotoniplasmassa edenneitä "ääniaaltoja"
- Vastuussa korrelaatiofunktion piikistä ja oskillaatioista tehosppektrissä

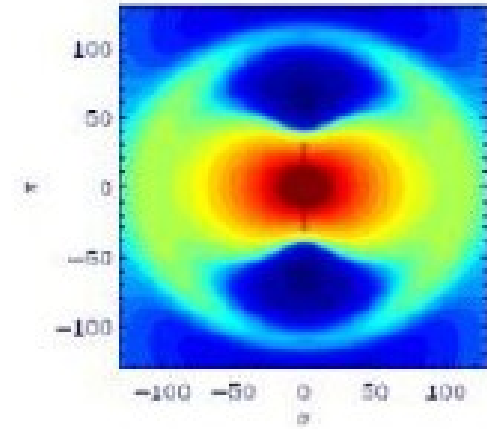
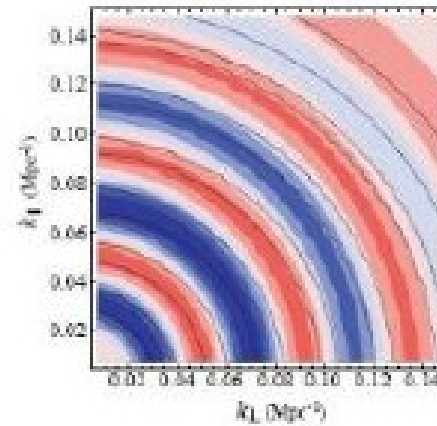
$$r_s(z) = \int_z^{\infty} \frac{c_s}{H(z')} dz'$$



2D-funktiot

-

$$r^2 = \pi^2 + \sigma^2$$



$$\tau_s / D_A$$

$$\tau_s H(z)$$

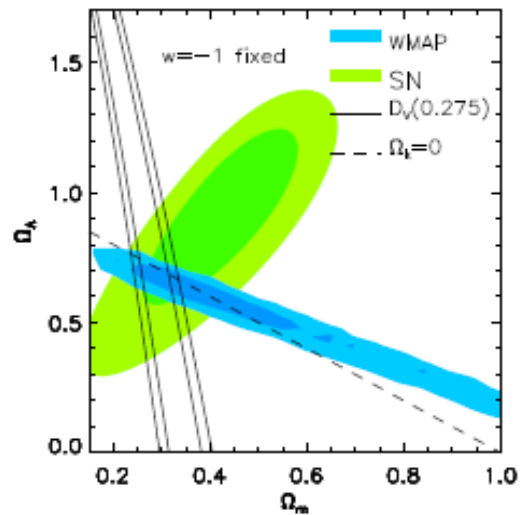
$$\lambda_{\perp} = \frac{D_A}{D_A^{ref}} \quad ; \quad \lambda_{\parallel} = \frac{H(z)^{ref}}{H(z)}$$

$$D_V = \left(\frac{(1+z)^2 D_A^2 cz}{H(z)} \right)^{1/3}$$

$$D_V / D_V^{ref}$$

$$r_s / D_V$$

Todennäköisyysjakaumat parametreille



$$f(x_1, \dots, x_n) = \frac{1}{(2\pi)^{n/2} \sqrt{\det(\mathbf{C})}} \times$$

$$\times \exp\left(-\frac{1}{2} [x_1 - \langle x_1 \rangle, \dots, x_n - \langle x_n \rangle] \mathbf{C}^{-1} [x_1 - \langle x_1 \rangle, \dots, x_n - \langle x_n \rangle]^T\right)$$

