Comparison with Data

local rate: (at given $T(x)$ and $\mu(x)$)

$$\frac{dN_{l^+l^-}}{d^4x d^4q} = L_{\mu\nu}(q)[H_\rho^{\mu\nu}(q) + H_\omega^{\mu\nu}(q) + H_\phi^{\mu\nu}(q) + \cdots]$$

need space-time history of the collision

- homogeneous fire-ball model:

  - isotropic homogeneous expansion
  - initial conditions from transport models
  - cooling curve $T(t)$ from transport models
  - particle abundances from $T(t)$ in equilibrium

  except for pions: $\mu_\pi \simeq 50$ (MeV)

rate:

$$\frac{d^2N}{dMd\eta} = \int_{t_i}^{t_f} dt V(t) \int d^3q \frac{M}{q_0} \frac{dN_{l^+l^-}}{d^4x d^4q}(t) A(M, |\vec{q}|)$$

$A(M, |\vec{q}|)$: detector acceptance (Monte-Carlo)