



# ESTUDO DA RELAÇÃO ENTRE BURACOS NEGROS PRIMORDIAIS E AS ONDAS GRAVITACIONAIS DETECTADAS PELO aLIGO

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# Detecção Ondas Gravitacionais

## ▶ GW150914:

- ▶ Binária de Buracos Negros;
- ▶ Qual a origem desses Buracos Negros?

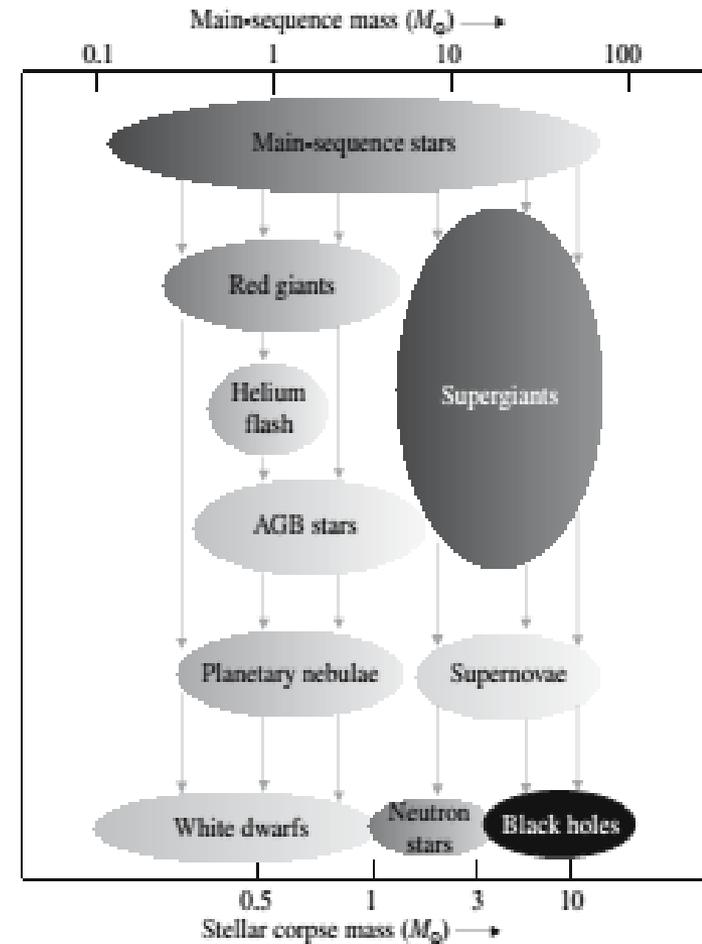


Fig. 1.3. Compact stars are the result of the endpoint in stellar evolution shown as a function of the initial mass



# Dark Matter

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- ▶ WIMPs - weakly interacting massive particles
  - ▶ Supersimetria entre bósons e férmions;
  - ▶ Neutralino;
- ▶ “Invisible Axions”
- ▶ LHC não detectou nada até então!



# PBH – Dark Matter

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- ▶ Mecanismo Affleck – Dine:

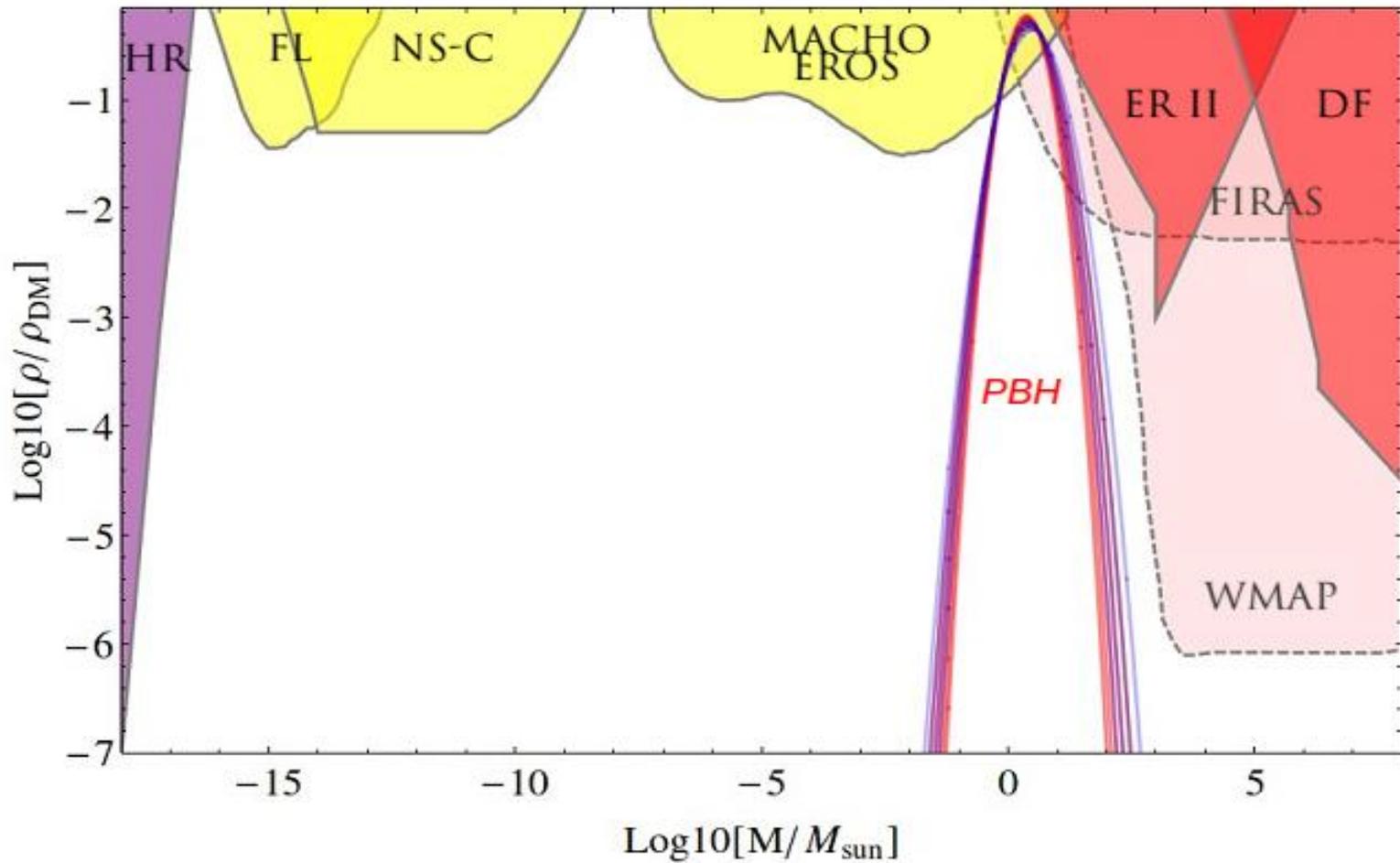
$$U(\chi, \Phi) = U_{\Phi}(\Phi) + U_{\chi}(\chi) + \lambda_1(\Phi - \Phi_1)^2|\chi|^2$$

- ▶ Distribuição log-normal:

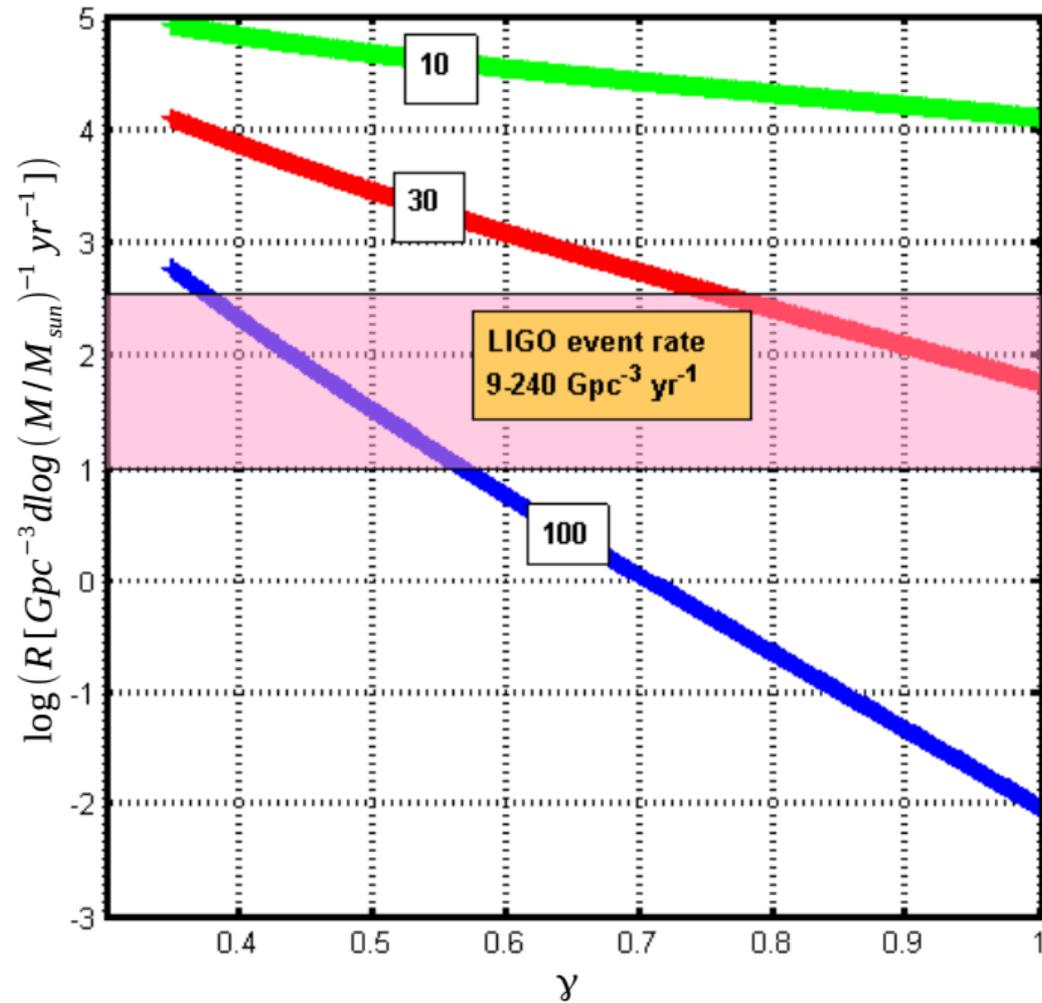
$$\frac{dn}{dM} = \mu^2 \exp[-\gamma \ln^2(M/M_0)]$$



# PBH – Dark Matter



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**OBRIGADA!**

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