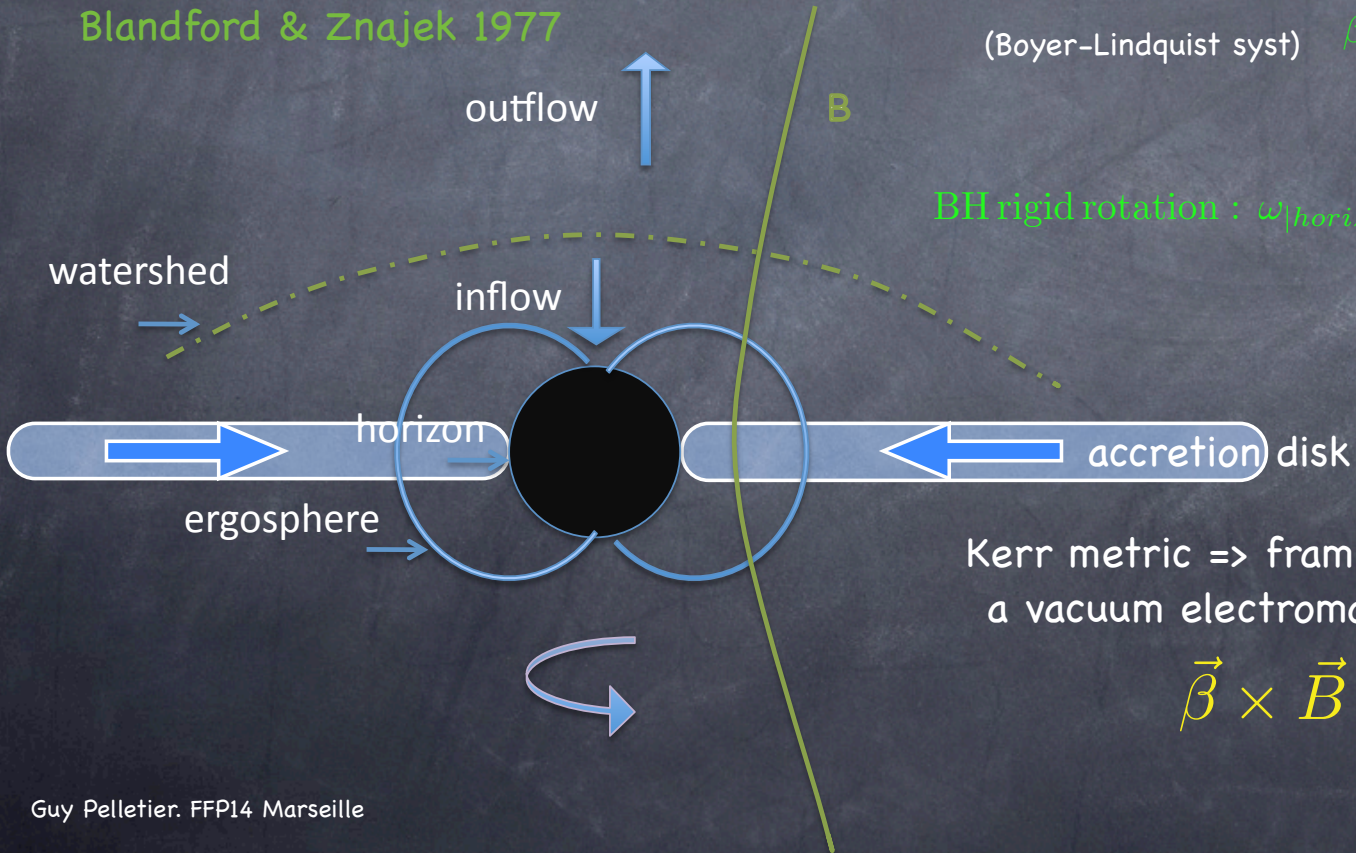


- Spinning Black Hole with an accretion disk carrying a magnetic field

Blandford & Znajek 1977



mass  $M$  and spin parameter :  $a/J = aMr_g c$   
 $ds^2 = -\alpha^2 dt^2 + g_{ij}(dx^i + \beta^i dt)(dx^j + \beta^j dt)$

(Boyer-Lindquist syst)  $\beta^0 = \beta^r = 0 \beta^\phi = -\omega$

$\alpha(r, \theta) = 0$  Horizon  
 $g_{tt} = 0$  Ergosphere

BH rigid rotation :  $\omega|_{horizon} = \Omega_{BH} = ac/2r_H$

Kerr metric  $\Rightarrow$  frame dragging  
 a vacuum electromotive field

$$\vec{\beta} \times \vec{B}$$