Where: 
- $F_a$ force applied by the linear actuator 
- $F_{cc}$ cranial-caudal hip contact force on the femoral head, i.e. resultant of the distal and the medial force components 
- $F_{abd}$ abductor force 

We want: $F_{cc} = 2.3BW$ at $13^\circ$ from the femur long axis, i.e. $\theta_{cc} = 13^\circ - \theta_b$ 
$F_{abd} = 1.1BW$ at $34^\circ$ from the femur long axis, i.e. $\theta_{abd} = 34^\circ - \theta_b$

Equilibrium on lever plate:

$\Sigma F_x = 0$

$F_{abd} \sin(34^\circ - \theta_b) - F_{cc} \sin(13^\circ - \theta_b) = 0$

$\theta_b = -4^\circ$

$\Sigma F_y = 0$

$F_{abd} \cos(34^\circ - \theta_b) + F_a - F_{cc} \cos(13^\circ - \theta_b) = 0$

$F_a = 1.33BW$

$\Sigma M = 0$ (with femoral head as reference point)

$F_{abd} d_m = F_a d_{off}$

$\theta_{off} = 0.83 \theta_m$