

Fracture half-length = X_f

Half of the total length $X_f = 0.5 \cdot L_f$ of the hydraulically induced vertical plane fracture (see **Fig. 1**).

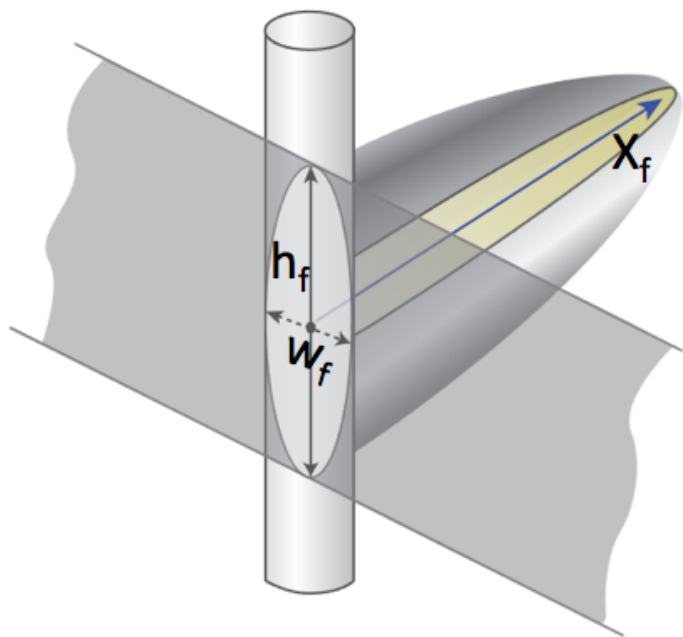


Fig. 1 – Hydraulic fracture schematic showing fracture half-length (X_f), fracture height (h_f) and fracture width (w_f).

For the fractured vertical well the **geometrical skin-factor** S_G is related to **Fracture half-length** X_f as:

(1)
$$S_G = -\ln\left(\frac{X_f}{r_w}\right) + \frac{1.65 - 0.328 u + 0.116 u^2}{1 + 0.18 u + 0.064 u^2 + 0.05 u^3}$$

where

$u = \ln F_{CD}$	
F_{CD}	dimensionless hydraulic fracture conductivity

In case of high **dimensionless hydraulic fracture conductivity** (corresponding to **infinite conductivity fracture** case) the skin-factor model can be simplified:

$$(2) \quad S_G = -\ln\left(\frac{X_f}{2r_w}\right)$$

See Also

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