

Calculate Wave Pressure due to Hurricanes

Using the Saffir-Simpson Hurricane Scale to predict surge height

$$\rho := 1000 \frac{\text{kg}}{\text{m}^3}$$

$$\text{water_height} := \begin{pmatrix} 4 & 5 \\ 6 & 8 \\ 9 & 12 \\ 13 & 18 \\ 19 & 0 \end{pmatrix} \cdot \text{ft}$$

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$$\text{water_pressure} := \rho \cdot g \cdot \text{water_height}$$

$$\text{water_pressure} = \begin{pmatrix} 249.712 & 312.14 \\ 374.568 & 499.424 \\ 561.852 & 749.136 \\ 811.563 & 1123.703 \\ 1186.131 & 0 \end{pmatrix} \text{ psf}$$