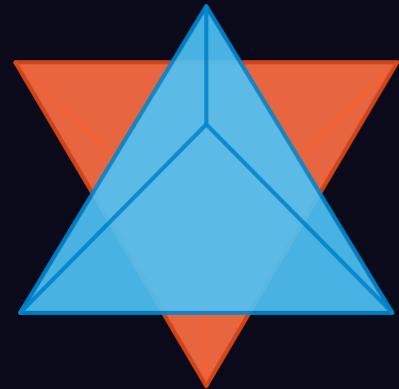


# Bootstrap & QCD Scale Determination

Group 1: Props 0.017j, 0.017q, 0.017y, 0.017z

Topological Inputs:



**Stella Octangula**

$$\chi = 4$$

$$\frac{R_{\text{stella}}}{\ell_P} = \exp\left(\frac{128\pi}{9}\right)$$

$$= 2.5 \times 10^{19}$$

$$\sqrt{\sigma} = \hbar c / R_{\text{stella}} = 440 \text{ MeV}$$

$10^{19}$

$R_{\text{stella}}$

0.45 fm



$10^{-35} \text{ m}$

$\ell_P$

Topology  $\rightarrow$  QCD Scale:  $\sqrt{\sigma}_{\text{predicted}} = 435 \text{ MeV}$  vs  $\sqrt{\sigma}_{\text{observed}} = 440 \pm 30 \text{ MeV}$

**Agreement:  $0.17\sigma$  — QCD emerges from pure geometry**