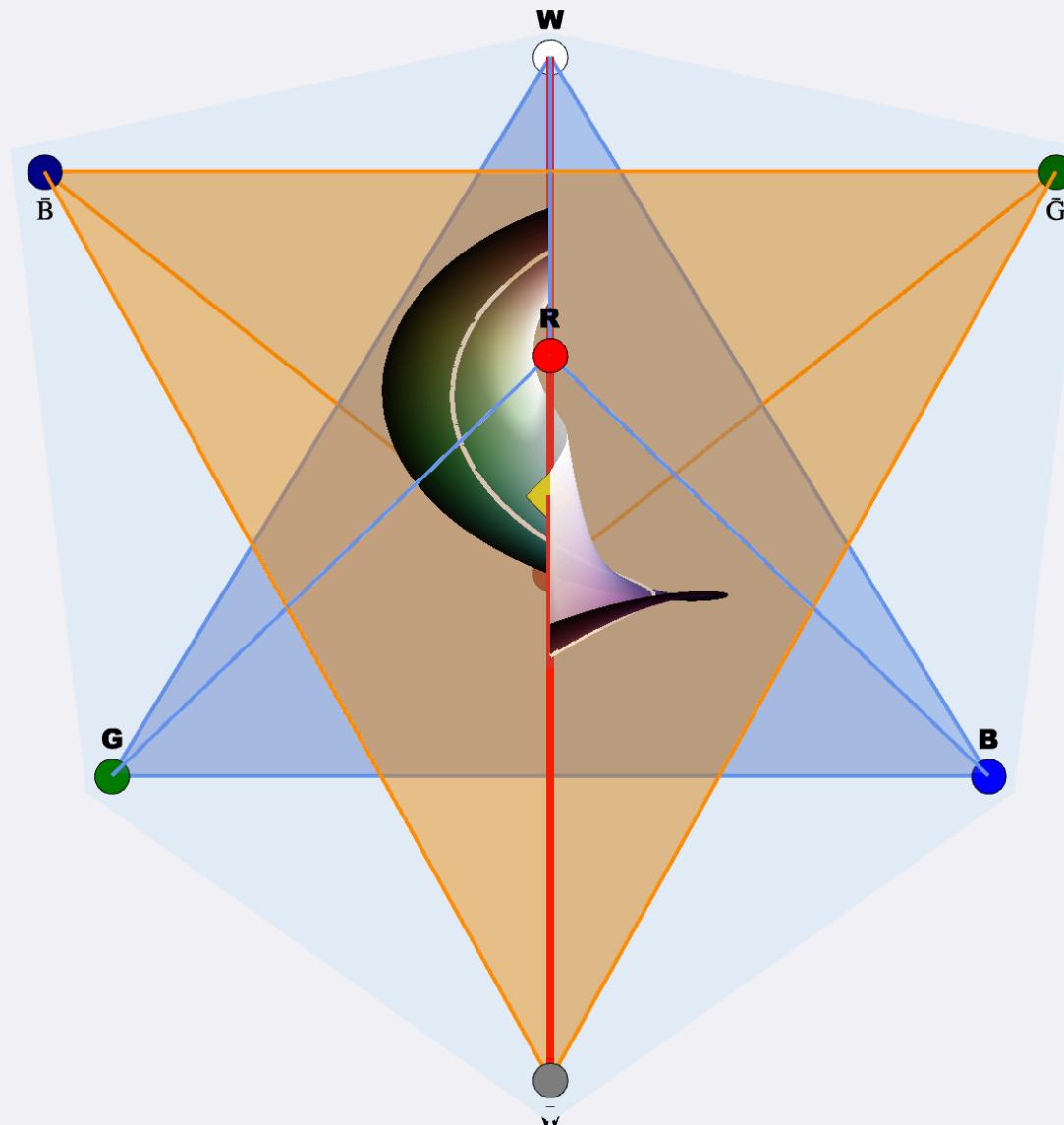


Chiral Vortex along W- $\bar{W}$  Axis:  $\chi_{\text{total}} = 0$  Where  $P_R = P_G = P_B$

- $T_+ (R, G, B, W)$
- $T_- (\bar{R}, \bar{G}, \bar{B}, \bar{W})$
- Vortex core (W- $\bar{W}$  axis)
- ◆ Center (origin)
- Winding loop ( $2\pi$ )

**Stella Octangula  $\partial S$  (Def 0.1.1):**  
 $T_+$  (blue): R, G, B, W vertices  
 $T_-$  (orange):  $\bar{R}, \bar{G}, \bar{B}, \bar{W}$  (antipodal)  
 $v_{\bar{c}} = -v_c$  for all colors



**Vortex along W- $\bar{W}$  axis:**  
 $\chi_{\text{total}} = 0$  where  $P_R = P_G = P_B$   
 This is the line  $(t, t, -t) \propto W-\bar{W}$   
 Phase cancellation:  $1 + \omega + \omega^2 = 0$

**W- $\bar{W}$  axis (singlet direction):**  
 $W = (-1, -1, 1)/\sqrt{3}$  (white vertex)  
 $\bar{W} = (1, 1, -1)/\sqrt{3}$  (anti-white)  
 Perpendicular to R-G-B plane