

## Six Involutions

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9:12 AM

There are 3 commuting involutions on v-knots:

1. 1D intrinsic orientation reversal.  $\gamma \mapsto -\gamma$   
(per component)

2. 2D ambient orientation reversal.  $\gamma \mapsto \gamma^1$   
(global)

3. Depth flip. (global)  $\gamma \mapsto \gamma^*$

The first two of these descend to w-knots.

There are three commuting involutions on  
ribbon 2-knots or long tubes:

1. 1D intrinsic orientation reversal,  $K \mapsto AK$   
(per component)

2. 2D intrinsic orientation reversal  $K \mapsto SAK$   
(per component)

3. 4D ambient orientation reversal  $K \mapsto K^*$