

# Projective Trajectory of $\sqrt[3]{2}$ Through HAPD Algorithm

## Periodicity Detection in Projective Space

This visualization shows how the HAPD algorithm tracks the coordinates of  $\sqrt[3]{2}$  through successive transformations. Periodicity is detected when point  $v_{11}$  returns to the projective equivalence class of point  $v_4$ , indicating a period of 7.

- Initial point  $v_0$
- Final point  $v_{11}$
- Periodic point  $v_4$

