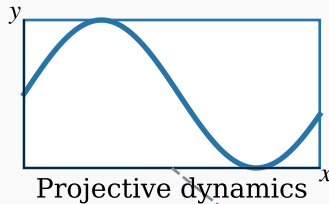


# Complementary Solutions to Hermite's Problem

## HAPD Algorithm

Non-subtractive approach

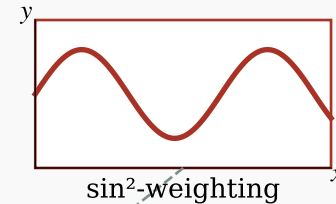
- Projective space  $\mathbb{P}^2$
- Matrix-based approach
- Standard floor function



## Modified $\sin^2$ Algorithm

Subtractive approach

- Complex plane analysis
- Transcendental terms
- Phase-preserving floor



complementary methods



## Common Properties

- Periodic precisely for cubic numbers
- Handle complex conjugate roots