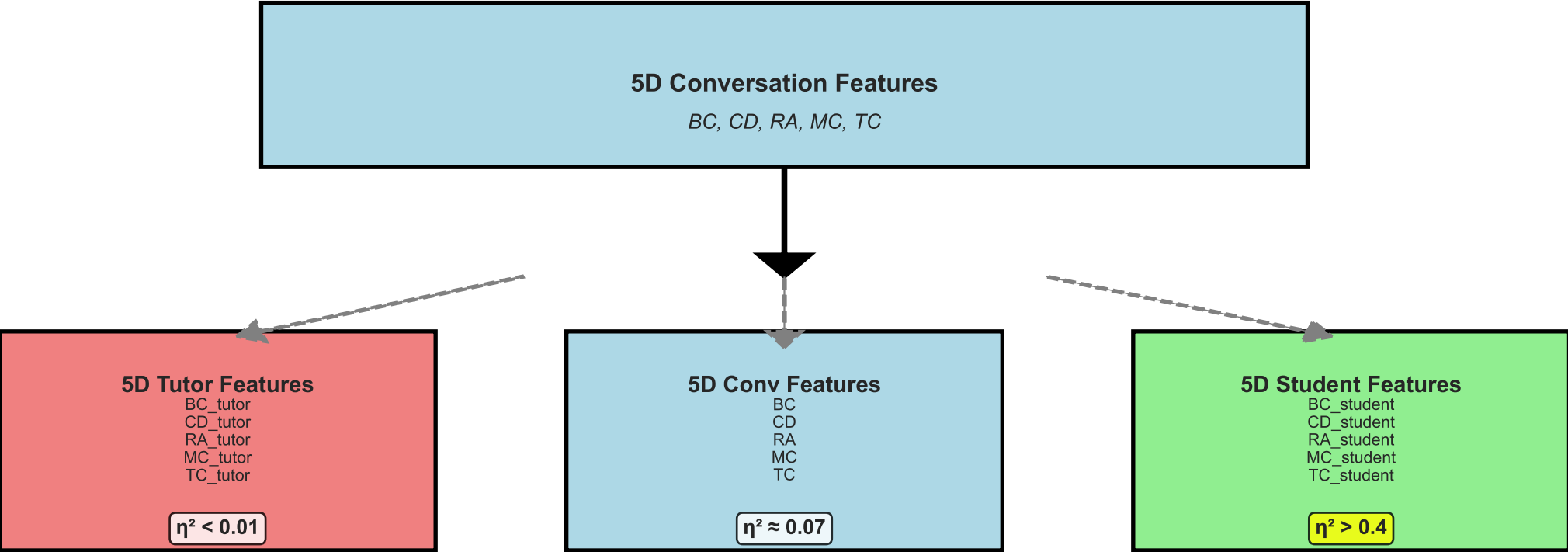


# Role Decomposition: 5D → 15D Feature Space



Key Finding: Students Drive Temporal Patterns

- Student features explain 60.8% of cluster variance ( $\eta^2 = 0.608$ )
  - Tutor features explain < 1% of variance ( $\eta^2 < 0.01$ )
- Conversation-level features (5D) wash out the student signal by averaging

Implication: Temporal archetypes reflect student engagement strategies, not tutor pacing. Tutors adapt to student rhythms.