The dialogue states are usually organized in triples such as domain-slot-value.

**Our work is inspired by two critical observations in multi-domain dialogue state tracking:**

- **Accumulating state triples.** The number of triples in dialogue states increases with the growth of dialogue turns.
- **Adjacent state dependencies.** Although the states are accumulating, the difference between two adjacent turns is constantly small.

The contributions of our work:
- We propose to divide DST into two successive stages, i.e., progressive domain-slot tracking and shrunk value prediction, based on our two observations.
- We adopt three levels of embeddings and attentions to model the domain-slot structure and capture the information on different levels.
- The progressive tracker predicts domain-slot pairs in parallel and reduce the number of domain-slot candidates significantly for value prediction, making our model more scalable and efficient.

**Discussion**

- The two observations can direct further research on developing more accurate domain-slot tracker, e.g., utilizing large-scaled pretrained language model.
- The three-level attentions enables finer-grained modeling of domain-slot predictions and can be extended to more complicated dialogue state ontology setting.
- The progressive domain-slot tracking mechanism can be improved to focus more on the state changes between neighboring turns.