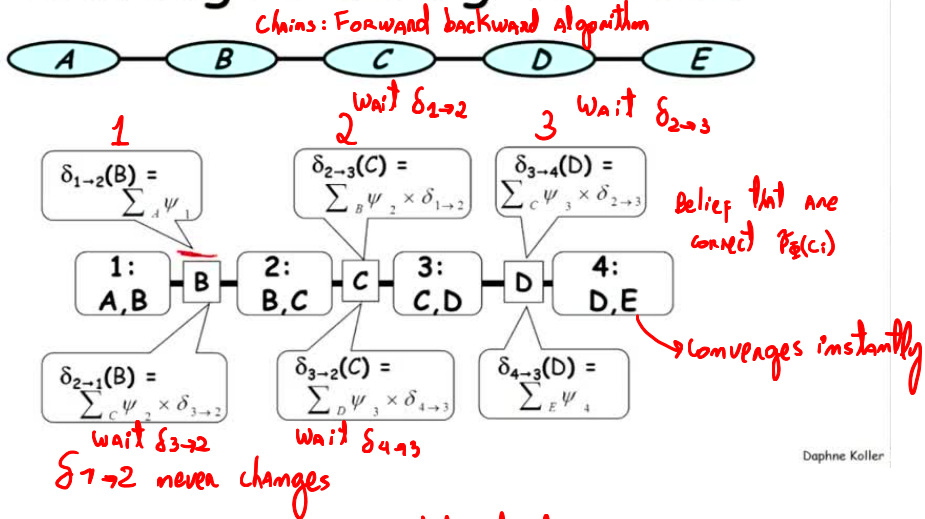


# Clique Tree Algorithm Computation

## Message Passing in Trees

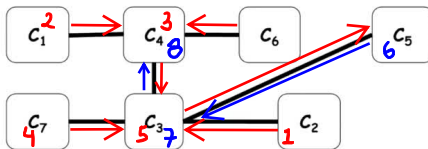


Daphne Koller

- Messages from leaves are immediately final

- Right order, then we only need  $2(K-1)$  messages where  $K$  is the total number of clusters

## Message Passing Order I



Daphne Koller

## Answering Queries

- Posterior distribution queries on variables that appear together in clique
  - Sum out irrelevant variables from any clique containing those variables  $\hat{p}_\theta$  unnormalized  
renormalize
- Introducing new evidence  $z = z$  and querying  $X$ 
  - If  $X$  appears in clique with  $z$