Towards Practical First-Order Model Counting

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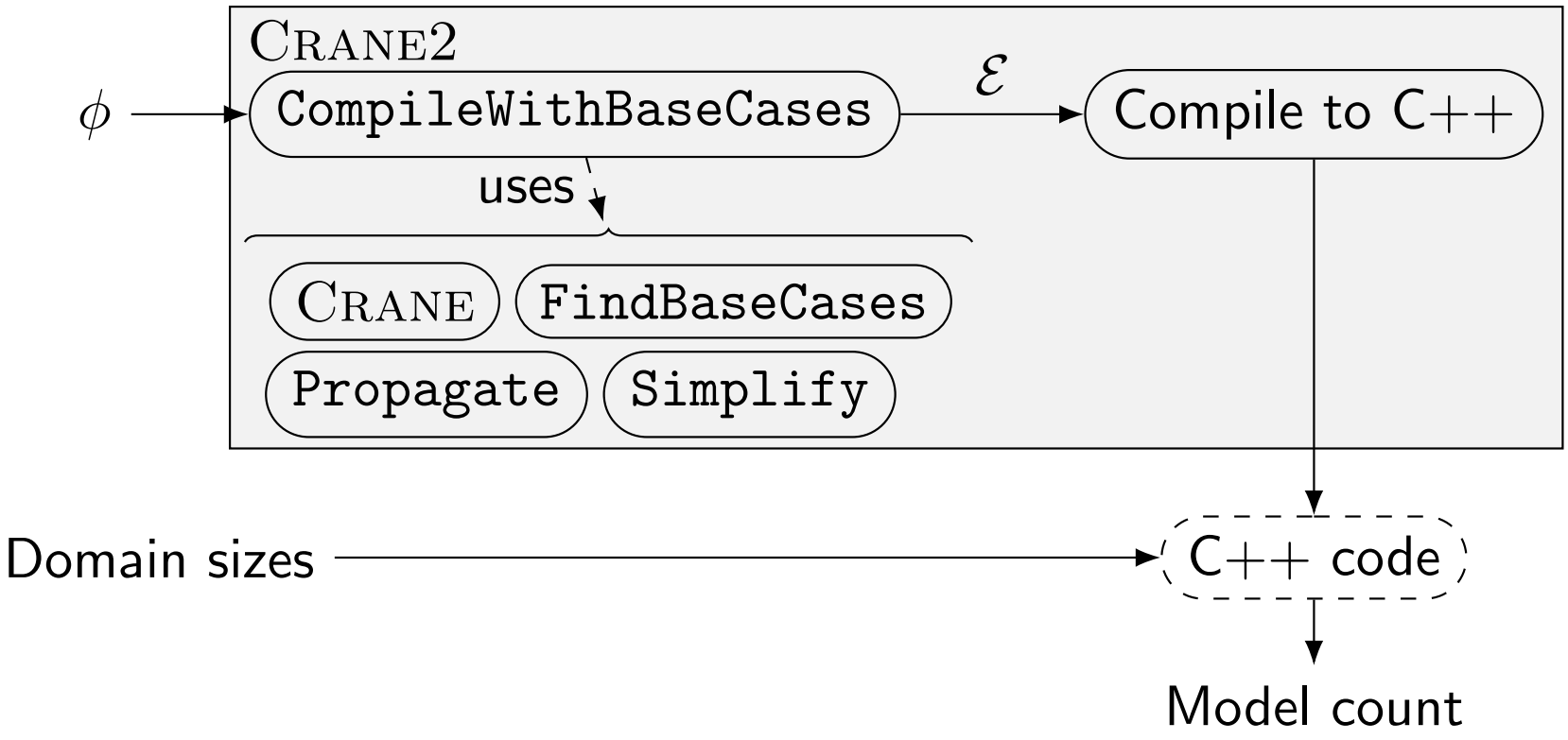
SAT 2025

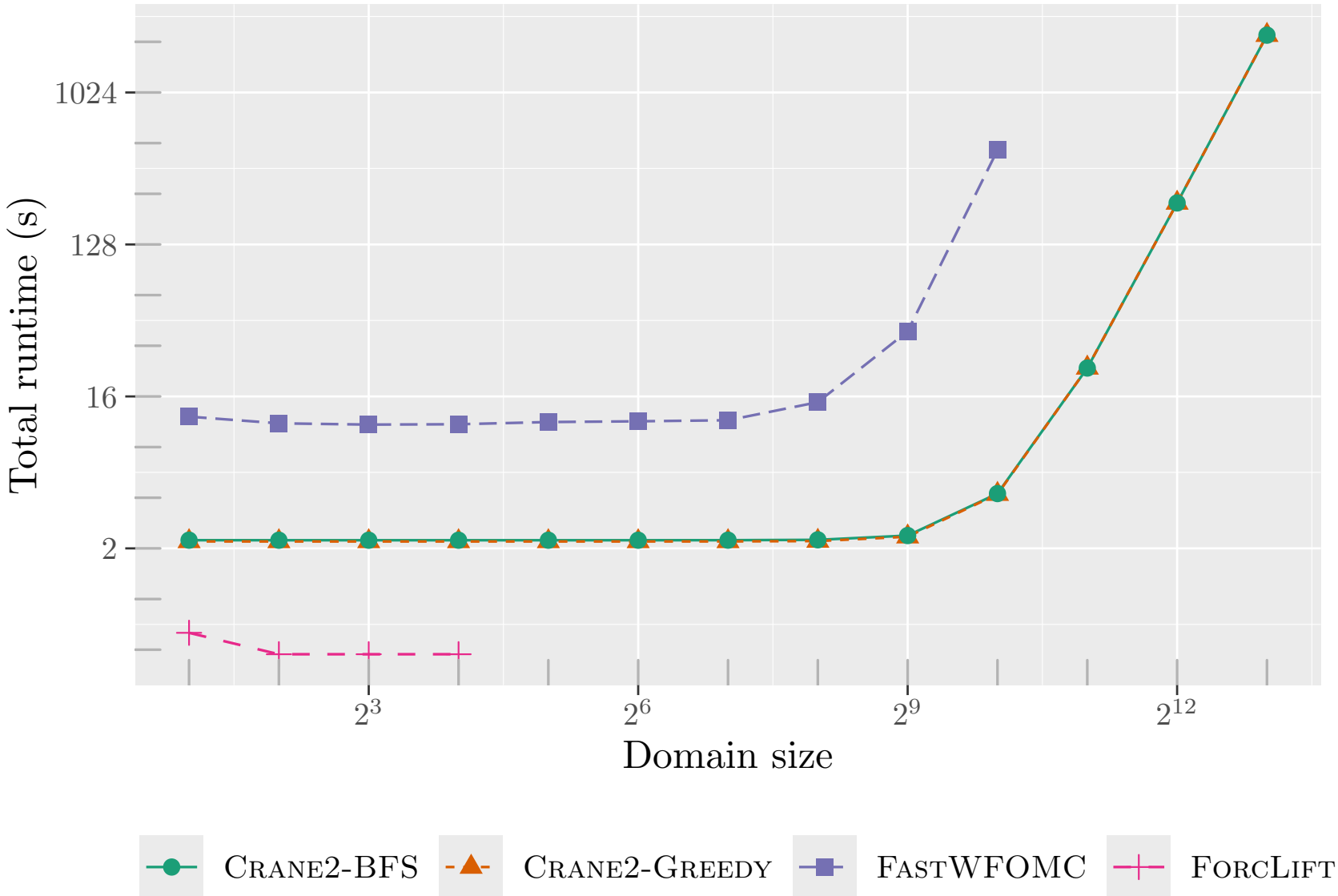
Knowledge Compilation Workflow



Friends & Smokers: The Formula

$$(\forall x, y \in \Delta.\ S(x) \wedge F(x, y) \Rightarrow S(y)) \wedge (\forall x \in \Delta.\ S(x) \Rightarrow C(x))$$

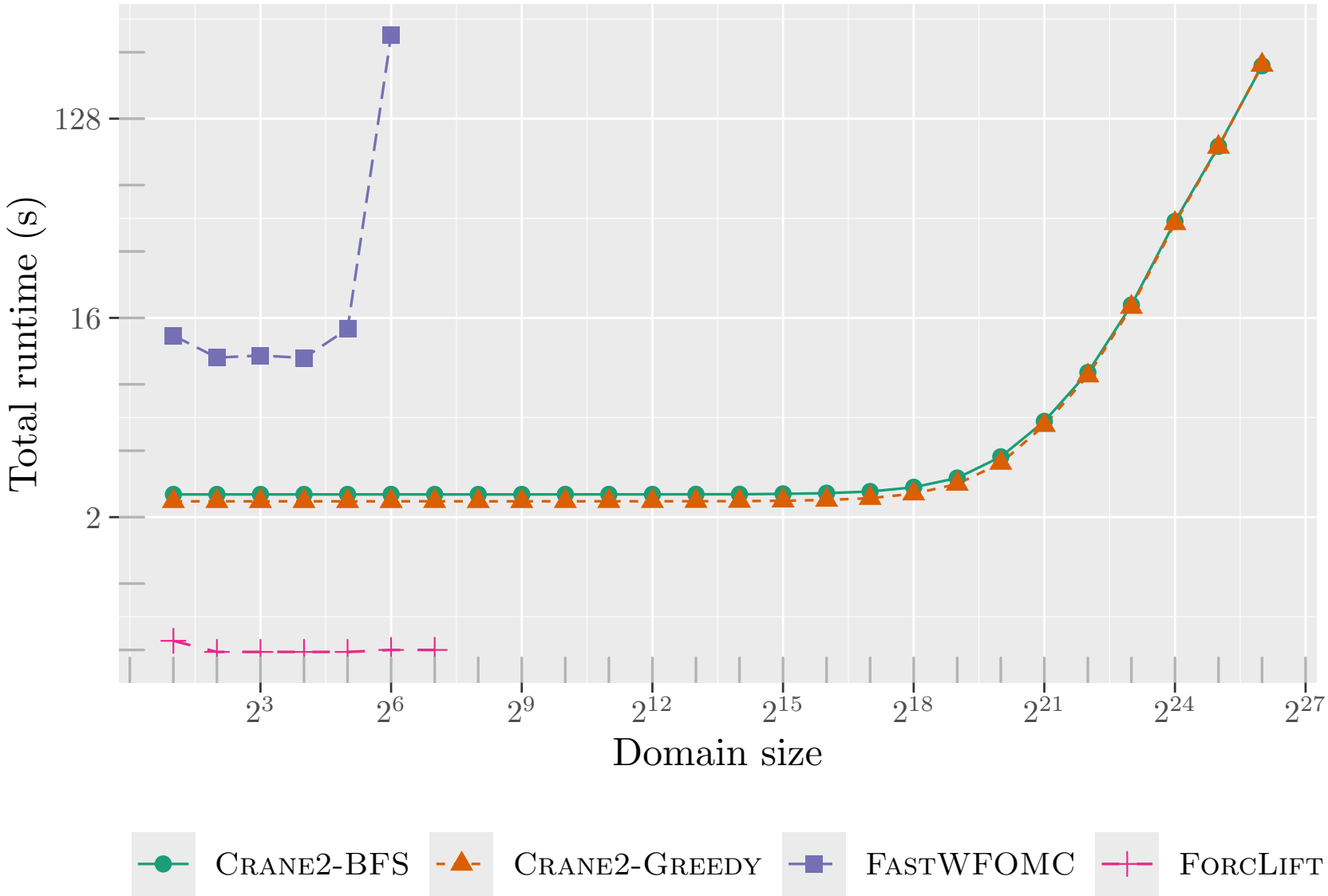
Friends & Smokers: The Results



Functions: The Formula

$$(\forall x \in \Gamma.\ \exists y \in \Delta.\ P(x, y)) \wedge$$
$$(\forall x \in \Gamma.\ \forall y, z \in \Delta.\ P(x, y) \wedge P(x, z) \Rightarrow y = z)$$

Functions: The Results



Bijections: The Formula

$$
\begin{gathered}
(\forall x \in \Gamma.\ \exists y \in \Delta.\ P(x,y)) \wedge \\
(\forall y \in \Delta.\ \exists x \in \Gamma.\ P(x,y)) \wedge \\
(\forall x \in \Gamma.\ \forall y,z \in \Delta.\ P(x,y) \wedge P(x,z) \Rightarrow y = z) \wedge \\
(\forall x,z \in \Gamma.\ \forall y \in \Delta.\ P(x,y) \wedge P(z,y) \Rightarrow x = z)
\end{gathered}
$$

Bijections: The Results