

Definition. Given a graph $\langle \mathcal{V}, \mathcal{E} \rangle$ and a labeling of each edge $e \in \mathcal{E}$ with a poset \mathbf{R}_e , the *design complexity* $\text{DC}(\langle \mathcal{V}, \mathcal{E} \rangle)$ is defined as

$$\text{DC}(\langle \mathcal{V}, \mathcal{E} \rangle) = \min_{F \text{ is an AFS}} \text{width}\left(\prod_{e \in F} \mathbf{R}_e\right).$$