An MCDP is a tuple $\langle \mathcal{A}, \mathbf{T}, \boldsymbol{v} \rangle$, where: 1. \mathcal{A} is any set of atoms, to be used as labels.

2. The term **T** in the {series, par, loop} algebra describes the structure of the

Definition (Algebraic definition Monotone Co-Design Problems)

- graph: $\mathbf{T} \in \mathsf{Terms}(\{\mathsf{series}, \mathsf{par}, \mathsf{loop}\}, \mathcal{A}).$
- 3. The *valuation* \boldsymbol{v} is a map $\boldsymbol{v}:\mathcal{A}\to\mathbf{DP}$ that assigns a DP to each atom.