⟨*workload*⟩ ::= Set ⟨*s-exp*⟩*
| Union ⟨*workload*⟩*
| Filter ⟨*filter*⟩ ⟨*workload*⟩
| Plug ⟨*workload*⟩ ⟨*string*⟩ ⟨*workload*⟩

⟨*s-exp*⟩ ::= Atom ⟨*string*⟩
| List ⟨*s-exp*⟩+

⟨*filter*⟩ ::= MetricLt ⟨*metric*⟩ ⟨ℕ⟩
| MetricEq ⟨*metric*⟩ ⟨ℕ⟩
| Contains ⟨*pattern*⟩
| Excludes ⟨*pattern*⟩
| Canon ⟨*string*⟩+
| And ⟨*filter*⟩+ | Or ⟨*filter*⟩+ | Not ⟨*filter*⟩

⟨*metric*⟩ ::= Atoms | List | Depth

Figure 1: workload abstract syntax.

$$[\![\mathsf{Set}\ ts]\!] = ts \qquad [\![\mathsf{Filter}\ \mathit{filter}\ \mathcal{W}]\!] = \{t \in [\![\mathcal{W}]\!] \mid [\![\mathit{filter}]\!]\,(t) = \mathit{true}\}$$

$$[\![\mathsf{Union}\ \mathcal{W}_1\ \mathcal{W}_2]\!] = [\![\mathcal{W}_1]\!] \cup [\![\mathcal{W}_2]\!] \qquad [\![\mathsf{Plug}\ \mathcal{W}_1\ \mathit{tgt}\ \mathcal{W}_2]\!] = \bigcup_{e \in [\![\mathcal{W}_1]\!]} [\![\mathsf{plug\_sexp}\ e\ \mathit{tgt}\ \mathcal{W}_2]\!]$$

$$[\![\mathsf{plug\_sexp}\ (\mathit{Atom}\ s)\ s\ \mathcal{W}]\!] = [\![\mathcal{W}]\!]$$
$$[\![\mathsf{plug\_sexp}\ (\mathit{Atom}\ s)\ \mathit{tgt}\ \mathcal{W}]\!] = \{\mathit{Atom}\ s\}\ \mathsf{when}\ s \neq \mathit{tgt}$$
$$[\![\mathsf{plug\_sexp}\ (\mathit{List}\ s_1\ \ldots\ s_n)\ \mathit{tgt}\ \mathcal{W}]\!] = \{\mathit{List}\ t_1\ \ldots\ t_n \mid t_i \in [\![\mathsf{plug\_sexp}\ s_i\ \mathit{tgt}\ \mathcal{W}]\!]\}$$

Figure 2: ENUMO workload semantics.

$$\frac{\Gamma \vdash \texttt{t}_1 : \texttt{Bool} \qquad \Gamma \vdash \texttt{t}_2 : \texttt{True}}{\Gamma \vdash \texttt{while t}_1\ \texttt{do t}_2\texttt{:}\ \texttt{True}}\ T-While$$

$$[\![\mathsf{MetricLt}\ M\ n]\!]\,(t) = [\![M]\!]\,(t) < n \qquad [\![\mathsf{Contains}\ p]\!]\,(t) = \exists \sigma, \sigma(p) \in \mathsf{subterms}(t)$$
$$[\![\mathsf{MetricEq}\ M\ n]\!]\,(t) = [\![M]\!]\,(t) = n \qquad [\![\mathsf{Canon}\ \vec{a}\ ]\!]\,(t) = \mathit{canon}(\vec{a}, t) == t$$