Definition (Loop operator †). For a map $h : F_1 \times F_2 \to \mathcal{A}R$, define

$$\begin{aligned} h^\dagger &: F_1 \to \mathcal{A}R, \\ f_1 &\mapsto \mathrm{lfp}\left(\Psi^h_{f_1}\right), \end{aligned}$$

where lfp is the least-fixed point operator, and $\Psi^h_{f_1}$ is defined as

$$\begin{aligned} \Psi^h_{f_1} &: \mathcal{A}R \to \mathcal{A}R, \\ R &\mapsto \operatorname*{Min}_{\leq_R} \bigcup_{r \in R} h(f_1, r) \cap \uparrow r. \end{aligned}$$