

$f, g \in \text{LSC}(X, \overline{\mathbb{R}}_+)$ $\mu \in \mathcal{V}(X)$. f, g, μ - 2.9 . μ f, g
() f, g

$$\begin{aligned} I(f+g, \mu) &= \sup \{I(f_n + g_n, \mu) : n \in \mathbb{N}\} \\ &= \sup \{I(f_n, \mu) : n \in \mathbb{N}\} + \sup \{I(g_n, \mu) : n \in \mathbb{N}\} \\ &= I(f, \mu) + I(g, \mu), \end{aligned}$$

dcpo- 5.2 $I(f_n, \mu) \leq I(g_n, \mu)$.
 $\mu \leq \mu_n \leq \mu$:

$$\begin{aligned} I(f+g, \mu) &= \sup \{I(f+g, \mu_n) : n \in \mathbb{N}\} \\ &= \sup \{I(f, \mu_n) : n \in \mathbb{N}\} + \sup \{I(g, \mu_n) : n \in \mathbb{N}\} \\ &= I(f, \mu) + I(g, \mu), \end{aligned}$$

□

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5.3 . (X, \mathcal{O}, \leq) . $(\mu_j)_{j \in J}$ $\mu \in \mathcal{G} = \mathcal{O}^\uparrow$:

(i) $\mu(U) \leq \liminf_j \mu_j(U)$

(ii) $f \in C_+^\uparrow(X)$ $\int f d\mu \leq \liminf_j \int f d\mu_j$

(iii) $g \in \text{LSC}_+^\uparrow(X)$ $\int g d\mu \leq \liminf_j \int g d\mu_j$

. (ii) \Leftarrow (iii) . (i) \Leftarrow (iii) $\chi_U \in C_+^\uparrow(X)$ $\int \chi_U d\mu = \mu(U)$ (iii) \Leftarrow (ii)

3.2 $g \in \text{LSC}_+^\uparrow(X)$ $f_i : X \rightarrow \mathbb{R}_+$. (ii) $\int f_i d\mu \leq \liminf_j \int f_i d\mu_j$.

$f_i \leq g$ $\liminf_j \int f_i d\mu_j \leq \liminf_j \int g d\mu_j$

$$\int g d\mu = \int \sup_i f_i d\mu = \sup_i \int f_i d\mu \leq \sup_i \liminf_j \int f_i d\mu_j$$