

システム計画論 第 2 回 課題

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$$\sup_{h \in [0,1]} \min \left(h, \chi_{(\tilde{A})_h}(x) \right) \quad (1)$$

$$= \max \left(\sup_{h \in [0, \mu_{\tilde{A}}(x)]} \min \left(h, \chi_{(\tilde{A})_h}(x) \right), \sup_{h \in [\mu_{\tilde{A}}(x), 1]} \min \left(h, \chi_{(\tilde{A})_h}(x) \right) \right) \quad \left(h = \mu_{\tilde{A}}(x) \text{ で } x \notin (\tilde{A})_h \text{ に注意して分割} \right) \quad (2)$$

$$= \max \left(\sup_{h \in [0, \mu_{\tilde{A}}(x)]} \min(h, 1), \sup_{h \in [\mu_{\tilde{A}}(x), 1]} \min \left(h, \chi_{(\tilde{A})_h}(x) \right) \right) \quad \left(\because x \in (\tilde{A})_h, \forall h \in [0, \mu_{\tilde{A}}(x)] \right) \quad (3)$$

$$= \max \left(\sup_{h \in [0, \mu_{\tilde{A}}(x)]} \min(h, 1), \sup_{h \in [\mu_{\tilde{A}}(x), 1]} \min(h, 0) \right) \quad \left(\because x \notin (\tilde{A})_h, \forall h \in [\mu_{\tilde{A}}(x), 1] \right) \quad (4)$$

$$= \max \left(\sup_{h \in [0, \mu_{\tilde{A}}(x)]} h, 0 \right) \quad (h \in [\mu_{\tilde{A}}(x), 1] \subseteq [0, 1] \text{ なので } h \geq 0) \quad (5)$$

$$= \max(\mu_{\tilde{A}}(x), 0) \quad (6)$$

$$= \mu_{\tilde{A}}(x) \quad (7)$$

$\mu_{\tilde{A}}(x) = \sup_{h \in [0,1]} \min \left(h, \chi_{(\tilde{A})_h}(x) \right)$ が示された.