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$$\mathcal{O}(D) \cap \mathcal{C}(\overline{D}) \overset{\text{res}}{\hookrightarrow} \mathcal{C}(S^1)$$

Definition. The **disk algebra** is

$$\mathcal{O}(D) \cap \mathcal{C}(\overline{D}) := \left\{ f \in \mathcal{C}(\overline{D}) \mid f|_D \in \mathcal{O}(D) \right\}$$

Proposition:

$$\begin{aligned} \sigma_{\mathcal{O}(D) \cap \mathcal{C}(\overline{D})}(f) &= f(D) \\ \sigma_{\mathcal{C}(S^1)}(f) &= f(S^1) \end{aligned}$$

- $\max\text{Spec} \mathcal{O}(D) \cap \mathcal{C}(\overline{D}) \cong ? \overline{D}$
- $\mathcal{O}(D) \cap \mathcal{C}(\overline{D}) \subseteq \mathcal{O}^\infty(D)$

$$\begin{aligned} C : \mathcal{C}(S^1) &\rightarrow \mathcal{O}(D) \cap \mathcal{C}(\overline{D}) \\ G : \mathcal{C}(S^1) &\rightarrow \mathcal{O}(D) \cap \mathcal{C}(\overline{D}) \end{aligned}$$

[1]

Current note has 0 direct children and 0 total descendants.

- [stem](#)
 - [subobjects of and functions on \$\mathbb{R}^n, S^n, \mathbb{C}^n\$ and its quotients \$\Gamma \backslash \mathbb{R}^n, \Gamma \backslash \mathbb{C}^n\$](#)
 - [Holomorphic functions on spaces over \$\mathbb{C}\$ of dimension 1](#)
 - $\mathcal{O}(D)$
 - $\mathcal{O}(D) \cap \mathcal{C}(\overline{D})$

And it has 5 siblings.

- [stem](#)
 - [subobjects of and functions on \$\mathbb{R}^n, S^n, \mathbb{C}^n\$ and its quotients \$\Gamma \backslash \mathbb{R}^n, \Gamma \backslash \mathbb{C}^n\$](#)
 - [Holomorphic functions on spaces over \$\mathbb{C}\$ of dimension 1](#)
 - $\mathcal{O}(D)$
 - [Boundary values of \$\mathcal{O}\(D\)\$](#)
 - $\mathcal{O}(\overline{D})$
 - $\mathcal{O}(D) \cap \mathcal{C}(\overline{D})$
 - $\mathcal{O} \cap L^2(D)$
 - [Reconstructing \$\mathcal{O}\(D\)\$ from its boundary values](#)

1. <https://math.stackexchange.com/a/3421153> ↩