Info

This note found here
as a part of a collection
is written (completely with human hands) by Rupadarshi Ray,
created on February 11, 2026 12:42:32 AM,
and was last modified on February 19, 2026 1:25:02 AM.

$\mathscr{O}(S^1)$

Consider the ring

$$\mathbb{C}[z, z^{-1}] \hookrightarrow \mathscr{O}(B_r(S^1)) \overset{\text{res}}{\hookrightarrow} \mathscr{O}(S^1) \hookrightarrow \mathcal{C}^\infty(S^1)$$

The ring is both Noetherian and a UFD. [1]

Current note has 0 direct children and 0 total descendants.

- space space
  - R The real and complex numbers
    - sphere Spheres
      - 1 S^1
- stamp stamp
  - Rf subobjects of and functions on $\mathbb{R}^n, T^n, S^n, \mathbb{C}^n$
    - 1Hol Holomorphic functions on spaces over $\mathbb{C}$ of dimension 1
      - space S1 $\mathscr{O}(S^1)$

And it has 22 siblings.

- stamp stamp
  - Rf subobjects of and functions on $\mathbb{R}^n, T^n, S^n, \mathbb{C}^n$
    - 1Hol Holomorphic functions on spaces over $\mathbb{C}$ of dimension 1
      - approx rat Approximation of holomorphic functions on $\mathbb{C}$ by rational functions
      - embedding into C3 Embedding unit disk D into $\mathbb{C}^3$
      - factorization Factorization of holomorphic functions on $\mathbb{C}$
      - global Global holomorphic functions

- Hol Equivalent descriptions of holomorphic functions
- Mer Meromorphic functions on the complex plane
- Mer at infinity Holomorphic functions meromorphic at infinity
- modular Modular forms
- recons mer from stalk Reconstructing meromorphic functions from stalks
- reflection Extending holomorphic functions by reflections
- rotation symmetrizer Rotational symmetrization of holomorphic functions
- sheaf Sheaf of holomorphic functions on $\mathbb{C}$
- space $\mathscr{O}(U)$
- space C $\mathscr{O}(\mathbb{C})$
- space D $\mathscr{O}(D)$
- space D closed $\mathscr{O}(\overline{D})$
- space D cnt bd $\mathscr{O}(D) \cap \mathcal{C}(\overline{D})$
- space D L2 $\mathscr{O} \cap L^2(D)$
- space H $\mathscr{O}^p(H^2_{\mathrm{U}})$
- space Lp $\mathscr{O} \cap L^p$
- space S1 $\mathscr{O}(S^1)$
- zeros and singularities Zeros and singularities of holomorphic functions

---

1. abstract algebra - Is the ring of holomorphic functions on S^1 Noetherian? - Mathematics Stack Exchange ↩