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$$Z\left(\sum_{1\leq j\leq n} z_j^2-1\right)(\mathbb{C})\cong_{\mathrm{Sym}} T^*S^{n-1}$$

Consider

$$\begin{aligned} Z\left(\sum_{1\leq j\leq n} z_j^2-1\right)(\mathbb{C}) &\rightarrow \mathbb{R}^n\times\mathbb{R}^n \\ x+iy &\mapsto \left(\frac{x}{|x|},-|x|y\right) \end{aligned}$$

which

- takes $Z\left(\sum_{1\leq j\leq n} z_j^2-1\right)(\mathbb{R})$ to $S^{n-1}\times\{0\}$

[1]

Current note has 0 direct children and 0 total descendants.

- [squishy](#)
 - $Z\left(\sum_{1\leq j\leq n} z_j^2-1\right)(\mathbb{C})\cong_{\mathrm{Sym}} T^*S^{n-1}$

And it has 30 siblings.

- [squishy](#)
 - $SL(2)(\mathbb{R})\curvearrowright\mathbb{R}^2$
 - $SL(2)(\mathbb{R})\curvearrowright H^2_{\mathbb{U}}$
 - $\mathrm{Mat}_{\mathbb{C}}(2)$
 - $A_{r,-}\langle z\mapsto\lambda z\rangle\backslash\mathbb{R}H^2_{\mathbb{U}}$
 - $\mathbb{C}\setminus\{0\},_{,-}\langle z\mapsto z+1\rangle\backslash\mathbb{R}H^2_{\mathbb{U}}$
 - $\mathbb{C}\setminus\{0,1\},_{-}PSL(2)(\mathbb{Z})[2]\backslash\mathbb{R}H^2_{\mathbb{U}}$
 - $\mathbb{R}\ltimes_{\theta}\mathbb{C}^2$
 - $\boldsymbol{CI}(\mathbb{R}^n,\langle\ ,\ \rangle_{0,n})$
 - $\mathbb{C}^n$
 - $U(\mathbb{C}\setminus\{0\})$
 - $PSL(2)(\mathbb{C})\curvearrowright\mathbb{C}P^1\cong_{\mathrm{Man}} S^2$
 - $\mathbb{C}P^n$
 - [Farey_graph_complex](#) and [tree](#)
 - GL
 - [Heisenberg_group](#)
 - [Incomplete_hyperbolic_polygon_mod_side-pairing](#)
 - $\mathbb{R}H^2,_{-}\mathbb{R}H^2_{\mathbb{U}},_{-}D^2$
 - $\mathbb{R}H^n$
 - [D_n_lattice](#)
 - [Matrices](#)
 - $\mathrm{Mat}_{\mathbb{R}}(2)$
 - [Mobius_endomorphisms](#)
 - [Elementary_group_with_finite_and_infinite_sided_Dirichlet_polyhedra](#)
 - [Polynomials](#)
 - $T^*S^1\not\cong_{\mathrm{Sym}}(\mathbb{R}^2\setminus\{0\},\mathrm{d}x\wedge\mathrm{d}y)$
 - $Z\left(\sum_{1\leq j\leq n} z_j^2-1\right)(\mathbb{C})\cong_{\mathrm{Sym}} T^*S^{n-1}$
 - SL
 - SO
 - [Seifert–Weber_dodecahedral_3-manifold](#)
 - $U(n,\mathbb{C})$

1. <https://arxiv.org/pdf/2510.10669> ↩