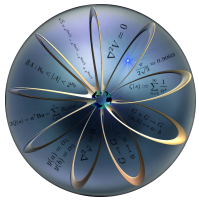

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Bargmann transform

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Defines	Bargmann transform

The Bargmann transform of a function, f, is a linear map $B : X(\mathbb{R}) \to Y(\mathbb{C})$ defined by

$$Bf(z) = \sqrt{2} \int_{\mathbb{R}} f(t)\, e^{2\pi t z - \pi t^2 - \frac{\pi}{2} z^2}\, dt$$

Theorem. *The Bargmann transform on $L^2(\mathbb{R})$, $B : L^2(\mathbb{R}) \to \mathcal{F}^2(\mathbb{C})$, is a unitary transformation. Here $\mathcal{F}^2(\mathbb{C})$ is the Fock space.*

References

[1] Karlheinz Grchenig, "Foundations of Time-Frequency Analysis," *Birkhhuser* (2000)