ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

8. Analysis

1991 MS Classification: 46,42,32

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Reproducing kernels related to the complex sphere

We shall introduce four Hilbert spaces with a reproducing kernel and study relations among them. These Hilbert spaces are related to Fourier transforms of analytic functionals on the complex sphere

$$\tilde{S}_\lambda = \{(z_1, z_2, \cdots, z_{n+1}) \in C^{n+1};\ z_1^2 + z_2^2 + \cdots + z_{n+1}^2 = \lambda^2\},$$

λ being a complex number. One of the four Hilbert spaces is the Hardy space on the truncated complex sphere $S_\lambda \cap \tilde{B}(r)$, where $\tilde{B}(r)$ is the Lie ball of radius $r > |\lambda|$.

General background of the talk is described in the forthcoming book "Analytic Functionals on the Sphere" by M. Morimoto (Monograph of AMS).