

for this interval are the result of solution of algebraic integral equations that include normal Legendre polynomials of the first and second kind, which is based on the solution of an optimal control problem from [6].

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HYPONELLIPTIC DIFFUSION, CHU DUALITY AND HUMAN VISION

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In neuroscience, there is a model of the primary visual cortex of mammals V1 as a subriemannian structure over the group $SE(2)$ of motions of the plane. The Hypoelliptic diffusion associated with this metric is used for the purpose of image completion or image reconstruction.

In my talk, I shall present the theory, together with a semi-discrete improvement of the model more in accordance with the discrete structure of V1, over the group $SE(2, N)$ of discrete rotations and all translations. The group under consideration being maximally almost periodic, and therefore subject to Chu duality, there is a much simpler harmonic analysis on it. It results in nice and efficient algorithms both for image completion and pattern recognition.

A preliminary version of the full work may be found in [1].

References

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