

POEMA

<i>Meeting Type</i>	<i>Online Learning Weeks</i>
<i>Date</i>	<i>17 June 2020</i>
<i>Time</i>	<i>16:00 – 17:30 CEST</i>
<i>Talk</i>	<i>Christoffel-Darboux Kernels</i>
<i>Lecturer</i>	<i>Edouard Pauwels (Institut de Recherche en Informatique de Toulouse)</i>
<i>No of attendants</i>	<i>74</i>

1. Questions during the course

- Can we define CD kernels on infinite-dimensional spaces ?
- Is CD kernels convergence? if so, what about W^* convergence maybe?
- If we are given a polynomial basis, how do we know if there exists a measure inducing a scalar product with respect to which the polynomial basis is orthogonal ? Example: the monomial basis.
- Am i right that for the affine invariance the linearity of the map A was (also) used to preserve that $w_d = v_d \circ A$ is still a polynomial of degree d . For polynomial diffeomorphisms A is there then a relation to higher degree CD kernels?
- Do we know anything about basics for zeroes CDkernels?
- What is known about the constant $C(d)$ for some special sets S ? like the hypercube, the ball, the sphere?
- In your first set of plots of point clouds, showing the level sets of the CD kernel, the point z was represented with a red dot. Does the choice of z influence the geometry of the level sets ?
- How poorly conditioned are the matrices M ?
- Is satisfied Derivatives of CD Kernels at Turan inequality?
- But is there any study on whether the ill-conditioning survives in multivariate Hankel matrix?