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**Discipline<sup>i</sup>** mathematics

**Bibliometric indicators**

1.	Number of journal publications in WoS/ Scopus	12
2.	Citations (WoS/Scopus) excluding self-citations	9
3.	Hirsch index (WoS/Scopus)	3
4.	Hirsch index in Google Scholar	6
5.	Citations in Google Scholar	90

1. The number of PhD students who have graduated under your supervision: 1

2. The number of PhD students currently supervised: 0

3. Are you currently accepting new PhD students:

- a. Polish Yes
- b. Foreign Yes

**Research interests (no more than 2000 characters)<sup>ii</sup>**

In 2018 we construct on a Riemannian manifolds a family of operators called a smooth orthogonal decomposition of identity in Hilbert space of square integrable functions on the manifold. This concept should be contrasted with the ubiquitous smooth partition of unity. see Bownik M., Dziedziul K., Kamont A. Smooth orthogonal projections on Riemannian manifold, [arXiv:1803.03634](https://arxiv.org/abs/1803.03634). This is a continuation of earlier result: Bownik M., Dziedziul K. Smooth orthogonal projections on sphere (2015) Constructive Approximation vol 41 23-48.

**Research in progress:**

**Characterizations of various function spaces on a compact Riemannian manifold**

Due to above result we expect to obtain a characterization of both Besov and Triebel-Lizorkin spaces on Riemannian manifolds.

**Continuous smooth orthogonal decomposition of identity in space of square integrable functions on sphere}**

Continuation of results from paper Bownik M., Dziedziul K. Smooth orthogonal projections on sphere (2015)

Constructive Approximation vol 41 23-48. Cooperation with Anna Kamont, IM PAN SOPOT and Marcin Bownik.

**Regression function on sphere:** Continuation of results from paper

Cmiel B., Dziedziul K., Jarzebkowska N. Multiresolution analysis and adaptive estimation on a sphere using stereographic wavelets Nonlinear Anal. 179 (2019) 41–71. Now we will attack the problem of estimation regression function on sphere. We plan to generalize result of C. Durastanti, Adaptive Global Thresholding on the Sphere, Journal of Multivariate Analysis, Vol. 151, 110-132, 2016 using above mentioned paper and an approach of Cucker and Smale,

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see Dziedziul K., Wolnik B. Note on universal algorithms for learning theory. Appl. Math. (Warsaw) 34 (2007), no. 1, 47--52.

**Funding or special equipment needed to carry out a PhD project <sup>iii</sup>:**

1. Is funding available for experimental work: Not applicable
2. Is the equipment needed to complete a PhD project available in your lab/department: Not applicable

**Most recent publications in WoS/SCOPUS journal – no more than 5 published after 1.01.2017**

No	Authors/title/journal	Journal IF/Quartile – for WoS and SNIP/ CiteScore for SCOPUS	Publication year
1.	<u>Cmiel B., Dziedziul K., Jarzebkowska N.</u> <u>Multiresolution</u> analysis and adaptive estimation on a sphere using stereographic wavelets <u>Nonlinear Anal.</u> 179 (2019) <u>41–71</u>	1,291 (IF) 1,278(SNIP)	2019
2.			
3.			
4.			

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5.			
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**Most recent externally funded projects you were involved in – no more than 3**

No	Project title, the name of the Princ. Investigator (PI) and the institution the project was carried out	Year awarded	Role in the project
1.			Wybierz element.
2.			Wybierz element.
3.			Wybierz element.

**Additional relevant information – (no more than 1600 charters)<sup>iv</sup>**

(Please fill in here)

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<sup>i</sup> You may select up to two disciplines out of 12 disciplines represented in the Doctoral School

<sup>ii</sup> Observe the limit of not more than 300 words

<sup>iii</sup> Leave only one answer

<sup>iv</sup> Add any other relevant information eg. awards for PHD students whom you supervised (no more than 200 words)