**Prospective supervisor’s form**

**Name of the supervisor:** Grzegorz Różyński  
**Academic title:** DSc  
**Orcid ID number:** https://orcid.org/0001-9822-9847  
**Institute of:** Hydro-Engineering  
**Polish Academy of Science in Gdańsk**  
**Department of:** Coastal Engineering and Dynamics  
**Phone:** +48 58 522 2907  
**E-mail:** grzegorz@ibwpan.gda.pl  
**Personal web page:** https://  
**Discipline:** civil engineering and transport [ILiT]  
**Optional**

**Key words (obligatory four key words describing research interests / expertise):**

- coastal zone morphodynamics
- climate change in coastal environments
- signal processing of coastal data
- coastal zone management

**Bibliometric indicators**

1. **Number of journal publications in WoS/ Scopus**  
   - WoS 40  
   - Scopus 49

2. **Citations excluding self-citations**  
   - WoS 419  
   - Scopus 455

3. **Hirsch index**  
   - WoS 12  
   - Scopus 13

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

2. **The number of PhD students currently supervised:**
   - within the current doctoral school: 0
   - within doctoral studies (previous system): 0

3. **Are you currently accepting new PhD students:**
   - Polish: **Yes**
   - Foreign: **Yes**
1. Comprehensive analyses of coastal and marine data, e.g. seabed elevations, seawater levels, marine currents, wave height, wind speed and direction, as well as data from laboratory experiments, e.g. loads on modeled coastal structures, with advanced signal processing techniques including ordinary, complex and 3-D principal component analysis, ordinary and multi-channel singular spectrum analysis, principal oscillation patterns, canonical correlation analysis, continuous and discrete wavelet transform and empirical mode decomposition methods. Results of such investigations include: (1) identification of morphological, hydrodynamic and meteorological patterns describing complex spatiotemporal processes in marine environment, which cannot be modeled with traditional process based approach, (2) construction of data-driven models using the identified patterns to provide tools for evaluation of current and future states of marine environment under climate change, (3) cross-validation of data-driven models with results of process-based modeling, and (4) bridging gaps between data-driven and process-based modeling approach.

2. Comprehensive analyses of coastal resilience trends based on measurements of nearshore sandy sediment stocks and recent progress in geo-radar acquired mapping of nearshore sediment structures in order to determine coastal segments most prone to erosion under future hydrodynamic regimes shaped by sea level rise and more energetic hydrodynamic regimes.

3. Comprehensive integrated coastal zone management studies using the systems approach including: (1) problem identification, (2) construction of virtual system linking key physical, ecological and socio-economic elements of given coastal cell/municipality, (3) modeling of key physical problems affecting the functioning of this cell (e.g. dredging of navigational channels, coastal erosion, beach nourishments, (4) appraisal of potential solutions, and (5) selection of optimum solution.

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**Funding or special equipment needed to carry out a PhD project**: Yes

1. Is funding available for experimental work: Yes/No/not needed

   Yes

2. Is the equipment needed to complete a PhD project available in your lab/department: Yes/No/not needed

   Yes

**Most important publications – no more than 5 published after 1.01.2018**

<table>
<thead>
<tr>
<th>No</th>
<th>Authors/title/journal</th>
<th>Number of points according to the current list of the Ministry of Science and Higher Education</th>
<th>Publication year</th>
</tr>
</thead>
</table>
### Prospective supervisor’s form

<table>
<thead>
<tr>
<th>No</th>
<th>Project title, the name of the Principal Investigator (PI) and the institution the project was carried out</th>
<th>Years</th>
<th>Role in the project</th>
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<tbody>
<tr>
<td>5.</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>No</th>
<th>Project title</th>
<th>Years</th>
<th>Role in the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>H2020 HYDRALAB+ Adapting to climate change — HYDRALAB-PLUS</td>
<td>2016-2019</td>
<td>PI</td>
</tr>
<tr>
<td>2.</td>
<td>BONUS EEIG A Systems Approach Framework for Coastal Research and Management in the Baltic (BaltCoast)</td>
<td>2016-2018</td>
<td>PI</td>
</tr>
<tr>
<td>3.</td>
<td>FP 7 Integrated water resources and coastal zone management in European lagoons in the context of climate change (Lagoons)</td>
<td>2011-2014</td>
<td>PI</td>
</tr>
</tbody>
</table>
My previous PhD student completed his thesis in 2011 and has been pursuing a successful career since then; he is now Deputy Director of the Institute of Hydro-Engineering of the Polish Academy of Sciences.