Project 7475 - PROMINENT

PRediction Of daMage evolution IN ENgineering sTructures

Faculty of Engineering University of Kragujevac

Institute for Information Technologies University of Kragujevac

https://prominent.kg.ac.rs/

Science Fund of the Republic of Serbia

About PROMINENT...

- The prevention of damage-induced failure is crucial in structural design.
- Phase-Field Damage Model (PFDM) will be used for the design of specialized Finite Element Method software tool PAK-DAM for the prediction of damage initiation, evolution, and the failure of damaged metallic and concrete structures.
- The application potential is widely covered in all types of engineering industry, but the most important is safety of large infrastructural objects such as concrete dams, bridges, high buildings, on one side and metallic parts in automotive, transportation, aviation, airspace, and biomedicine industries

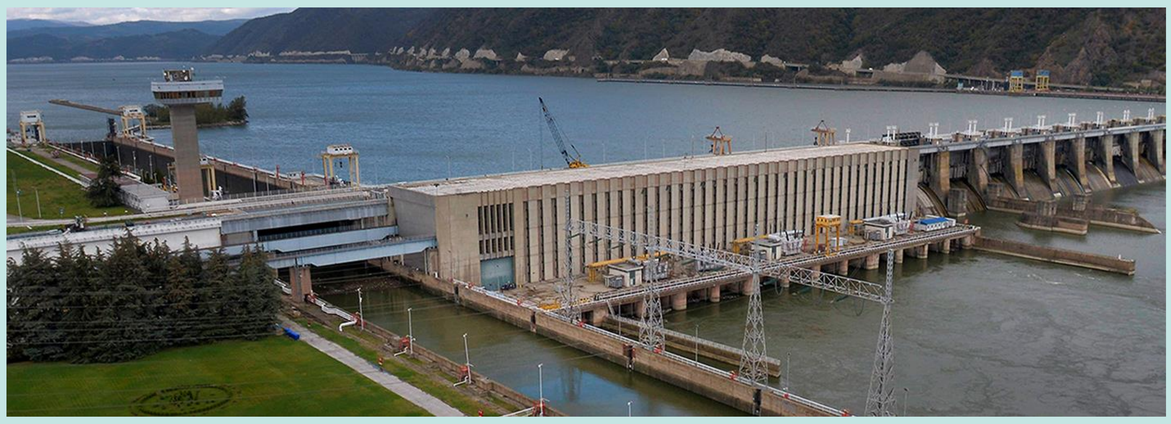
PROMINENT objective...

To improve, streamline, and facilitate the procedure of structural design and structures' health monitoring by

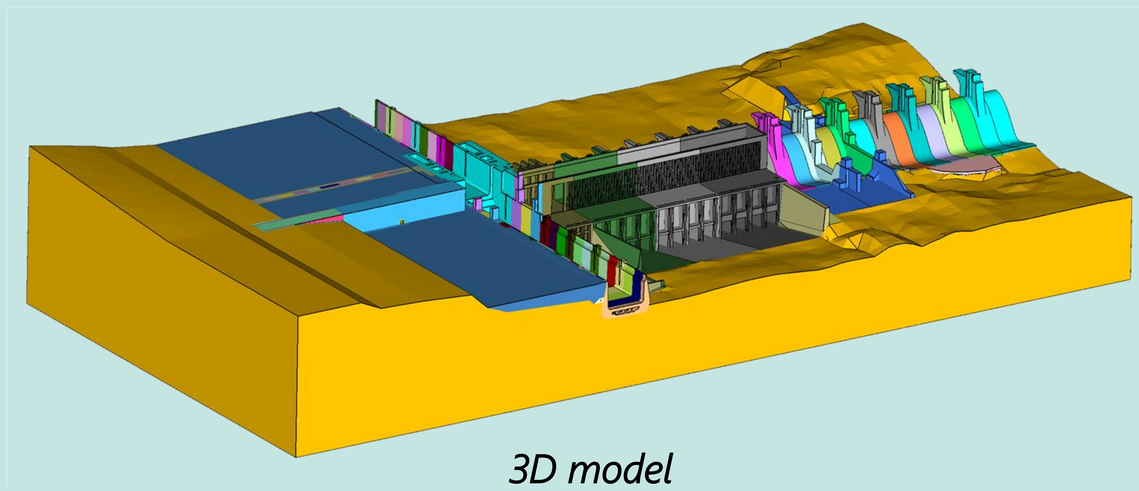
- designing a software tool PAK-DAM for prediction of damage initiation and evolution in engineering structures, and
- experimental investigation of materials to identify material parameters, to calibrate constitutive models, and to test and verify software functionality and accuracy.

PROMINENT results...

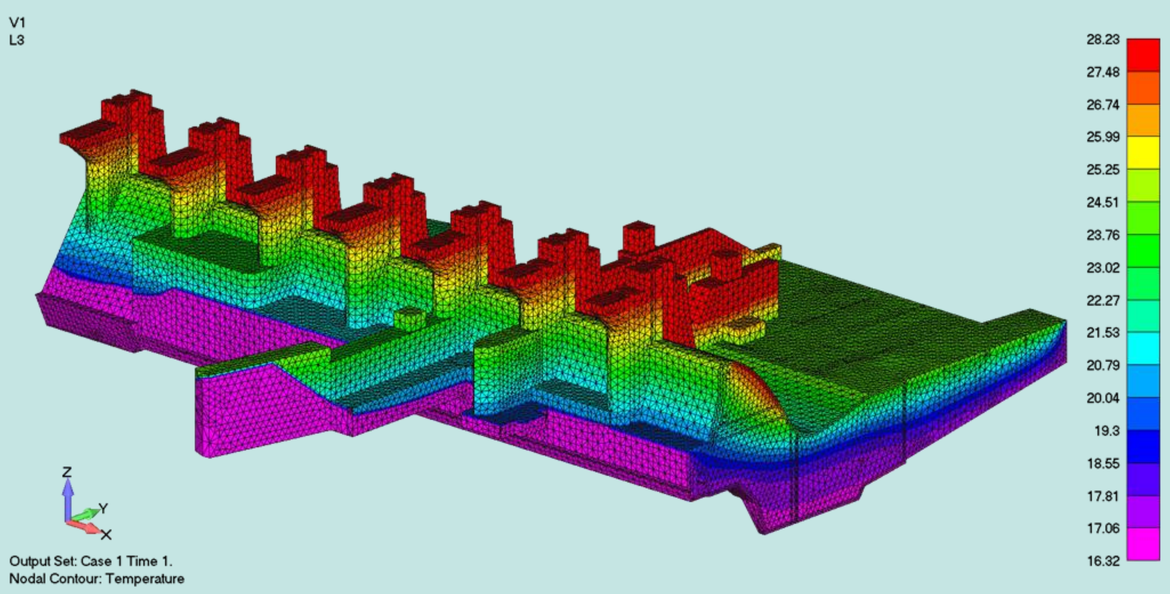
- Theory, User, and Example manuals for software PAK-DAM.
- Increasing of partner institution experimental research capacity and development of experimental investigation techniques.
- Source code of PAK-DAM software tool and executable for structural design application.



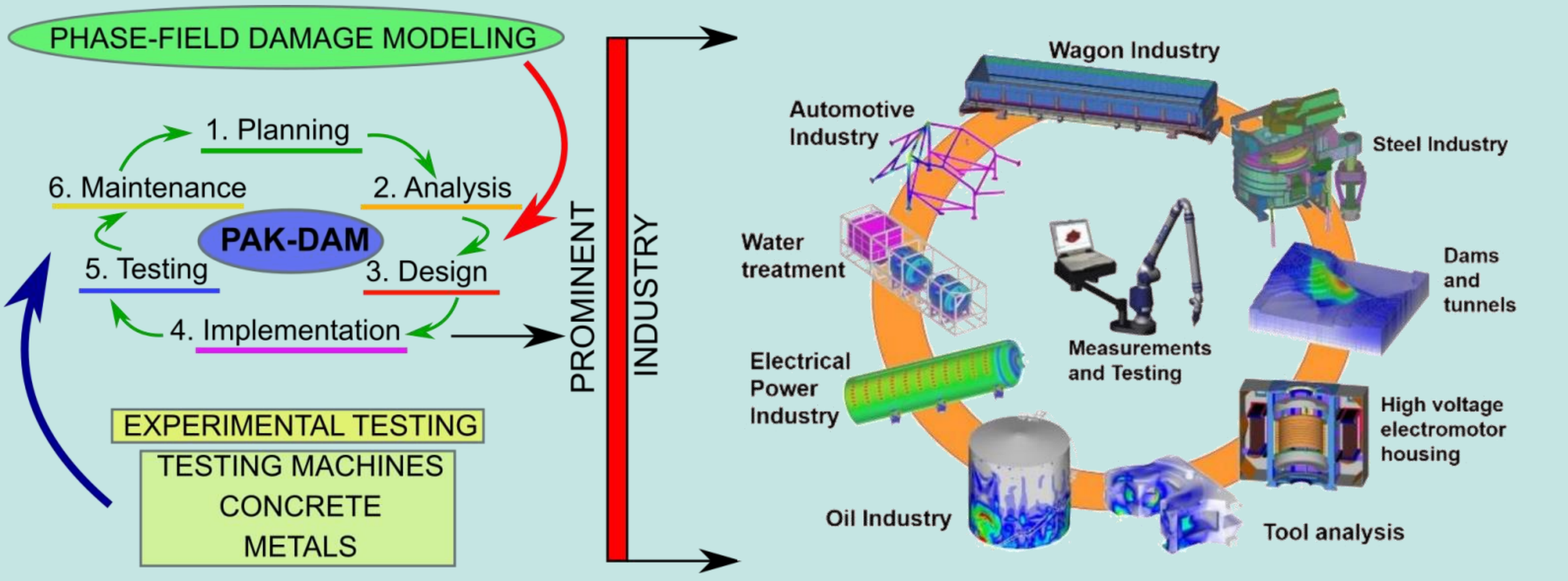
HPP Djerdap 1
(© Elektroprivreda Srbije)



3D model



Temperature field



This poster is created by financial support of the Science Fund of the Republic of Serbia. The Faculty of Engineering and the Institute for Information Technologies are solely responsible for the content of this publication, and this content does not reflect the views of the Science Fund of the Republic of Serbia.