

## COMBINATORIAL DT WITH RK IEM TECHNOLOGY

V. KRIŽAIĆ<sup>1</sup>, J. KRIŽAIĆ<sup>2</sup>, A. BILOGLAV<sup>2</sup>

<sup>1</sup> Polytechnic of Međimurje  
40000 Čakovec

<sup>1</sup> vladimir.krizaic@gmail.com and <https://www.semanticscholar.org>

<sup>2</sup> Faculty of Mechanical Engineering and Naval Architecture Zagreb  
10000 Zagreb

<sup>2</sup> jkrizaic@gmail.com and <https://www.semanticscholar.org>

<sup>2</sup> Faculty of Mechanical Engineering and Naval Architecture Zagreb  
10000 Zagreb

<sup>2</sup> abiloglav@gmail.com

### ABSTRACT

The development of the Ritter-Križaić $\infty$  (RK $\infty$ ) method, or infinite element method (IEM) technology, for trusses provides a technology that is also advantageous for digital twin (DT) systems. Beginning with inclined single-roof, flat, and curved structures, it is possible to simulate the behaviour of rod forces acting on infinitely large and infinitely small structural elements with minimal time and computational resources. This simulation optimises the structural element and examines the simulation behaviour of RK-IEM technology on a simple beam, using both solid and truss models with different material components. RK-IEM code is used to create simulation games and is also integrated into the organizational dynamic structural programming method, or DSP code method, thus bridging the gap between constructors and organizers or managers. That is how the code is simulated. In this way, the internal and external actions in a wooden beam and a reinforced concrete slab are simulated, allowing comparison of the moment forces in the truss and the given structures. This results in a combinatorial DT system for simulating or comparing a structural element from different sources, optimising the dimensioning of the spatial characteristics of beams and slabs from various resources.

Key words: Digital twin, RK-IEM cod, IEM technology, DSP cod method

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