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## **A CRITICAL PRESENTATION OF "TSIRIGGAKIS' GEARLESS DIFFERENTIAL"**

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This paper presents the concept and basic features of the gearless differential that was worldwide patented since early 1980s by the Greek practical engineer Mr Theodore B. Tsiriggakis. In the beginning, a detailed literature review is presented for the history of the differential focussing on other gearless mechanisms. A detailed description of the structure and operation of Tsiriggakis' gearless differential follows. Then, a summary of a preliminary kinematical study is reported. Differences and advantages over prior art as well as production possibilities are discussed. The study includes possible extensions of the same concept to other mechanisms such as speed-increasing/speed-reducing gearless mechanisms.

**Key words:** Differential gear, gearless power transmission

## **KRITIČKA ANALIZA "TSIRIGAKISOVOG MODELA BEZUPČANOG DIFERENCIJALA"**

Ovaj dokument predstavlja koncept osnovnih osobina bezupčanog diferencijala koji je u svetu primenjen od ranih 80-tih od strane Grckog inženjera praktične primene Mr. Teodora B. Tsirigakisa. U uvodnom delu je dat detaljni prikaz razvoja diferencijalnog fokusa na ostalim bezupčanim mehanizmima. Detaljni opis strukture i načina rada Tsirigakisovog modela sledi. Potom, dat je uvid u elementarnu kinematičku analizu. U ovom radu diskutovano je o razlikama i prednostima u odnosu na prošle modele. Ovaj rad sadrži moguće primene istog koncepta na ostale mehanizme, kao i bezupčane mehanizme za ubrzanje i usporenje.

**Ključne reči:** diferencijal, bezupčani prenos snage