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Research and development of hydro-mechanical differential variator

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Abstract

The author has carried out the analysis of dynamic-coupled automatic transmissions and regarded the prospects of their application and development. New design of continuously variable transmission based on differential hydra-mechanical gear train was developed and covered by RF patents No2298125 and No2347966. Principles of work performance for high-torque differential hydra-mechanical gear train based on interoperation equableness of moments opposing one another that are produced at the gear carrier owing to inner forces of differential stages as well as self-actuated pressure variation and hydraulic fluid consumption change when it comes through hydraulic pump and hydraulic actuator.

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Keywords

Continuously variable transmission, Differential hydra-mechanical variator, High-torque differential hydra-mechanical variator, Hydra-mechanical gear train, Mechanical diagram