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NOVEL HYBRID POWERTRAIN

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NOVEL HYBRID POWERTRAIN

Initial situation:

Normally, today's PHEV models are built and offered on the market in a so-called P0, P1, P2, P3 a/b or P4 arrangement.

Disadvantage:

In the PPHEV, the circumstance has arisen that the transmission input power has not been sufficient for the project-specific driving performance. Thus, in our case, the singular P2 arrangement cannot meet the requirements.

Solution:

In order to extend the power/torque limitation of the P2 arrangement, a combinatorics of P2-E machine has been combined with a powerful P3b-E machine. In contrast to today's applications, the P3b-E machine is arranged transversely to the direction of travel. Through the P3b-E machine, power is delivered directly to the wheels without putting additional load on the main transmission.

Advantage:

By combining P2 and P3b-E machines, the system power in the vehicle can be significantly increased without the need for a new main transmission or an upgrade of the main transmission.

Technical implementation:

Shown below is one of the possible realisations of the drive system.

The combinatorics consists of a VKM, a main gearbox with an integrated E-machine (P2-arrangement) as well as an integrated mechanical limited slip differential and a rear axle module which contains the so-called P3b-E-machine (arranged transverse to the direction of travel). The main transmission and the rear axle transmission are mechanically connected via a cardan shaft.

