ABSTRACT

An active-passive dual mode switchable vehicle suspension system is provided. The suspension system includes a filter, a hydraulic pump, a one-way valve, a power takeoff, a servo valve, a suspension cylinder, an overflow valve, an energy accumulator, a reversing valve, a first pressure sensor, a second pressure sensor, a controller, an oil tank and a displacement sensor. Further related is a switching method for the active-passive dual mode switchable vehicle suspension system. When the active and passive dual-mode switchable vehicle suspension system is switched between modes, an oil pressure in the rodless cavity of the suspension cylinder and an oil pressure in the energy accumulator are adjusted to be equal in advance, so that the stable switching of the active-passive suspension system can be realized, and the vibration of the vehicle body is eliminated when the existing active-passive suspension system is switched. Moreover, the accumulator and overflow valve can be shared in the active and passive suspension mode, thereby effectively reducing the use number of accumulators and overflow valves, greatly saving the layout space of the vehicle body, effectively reducing the total weight of the vehicle body, which is favorable to the lightweight of the vehicle chassis.

<FIGURE 1>