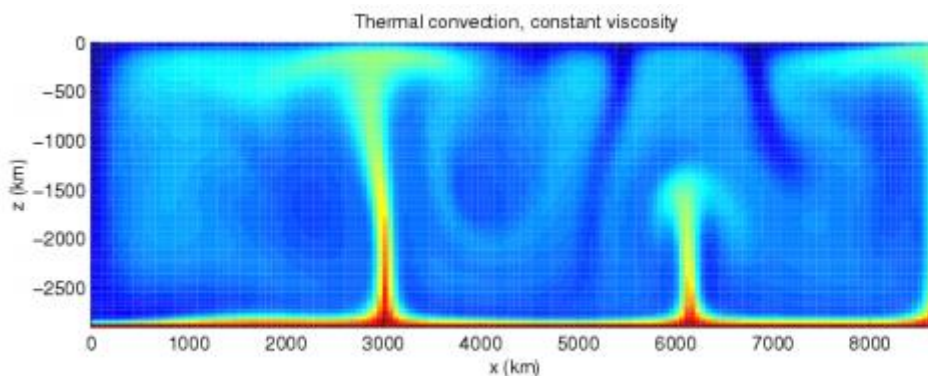


"PASSIVE" REGULATION OF FLUID CIRCUITS

Main Technological Area → Energy

Keyword → fluid circuit | temperature-sensitive valves | energy saving | intrinsic control | reliability and maintainability

Solution for the heat transfer in fluid circuits, with a temperature control that does not require energy, improves reliability and reduces maintenance. These features are achieved by using temperature-sensitive valves that automatically open and close at programmable temperatures. In essence, the circuit exercises a heating (cooling) action when the temperature of the fluid is below (above) a predetermined value intermission

**TECHNICAL FEATURES**

Fluid circuits equipped with thermal expansion valves of the following types:

- Cold opening valves: they interrupt the flow in the circuit when the valve temperature is higher than the programmed cold threshold temperature; modulate the flow in the circuit as a function of the valve temperature when this is less than the cold threshold
- Valves with hot opening: they interrupt the flow in the circuit when the valve temperature is lower than the programmed temperature of the hot threshold; modulate the flow in the circuit as a function of the valve temperature when this is greater than the hot threshold.

INNOVATION/BENEFITS

- a) The system does not require components powered by external energy (pumps, motorized valves);
- b) Circuit assembly and disassembly operations do not require the circuit to be emptied;
- c) The operating temperature range can be programmed through the filling gas pressure of the valves.

AREAS OF USE

Heat transfer associated with temperature control without energy costs. Cooling of:

- engines for UAVs
- motors with photovoltaic power supply
- "geothermal" air conditioning for residential buildings,



PATENT INFORMATION

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