TRANSFORMANT HILBERT IN CONTROL PARAMETERS OF TECHNICAL CONDITION OF FORAGE HARVESTER

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Abstract. *The results of investigations of vibration characteristics of diesel nozzles with the use of the Hilbert transform and the possibility of their use for diagnostics of the technical condition forage harvester. It is known that fuel supply is short neostalinism movement of the compression liquid, wherein from the pump to nozzle at speed of sound is the primary wave pressure. The abrupt transition from the cross section of the fuel channel to the cross section of nozzle inhibits the movement of fuel and causing a hydraulic shock. At the time of injection through the spray holes of fuel flow has a turbulent nature. Turbulence occurs also as a result of compression of the jet in the nozzle and following the expansion. Turbulent fluid flow is characterized by irregular, disordered change (pulsation) of the velocity in time in each point of the flow and pressure pulses. Range of amplitudes and frequencies of pulsations of velocity and pressure is quite broad. Thus, the main sources of the fluctuations in the housing of the atomizer is needle atomizer, and hydrodynamic processes that occur in the process of injection of fuel. And these failures, as the change efforts pre-tightening and breakage of spring injector stuck in the needle spray, and change of cyclic fuel supply lead to changes in these hydrodynamic processes, which is certainly reflected in vibro-acoustic processes in the jet.*

So, the vibro-acoustic characteristics of nozzles can be used for CIP diagnosis directly on the engine.

Key words: ***knot, defect, option, transformant, forage harvester***