Monitoring and dynamic analysis during the composite drilling

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Keywords.
Monitoring, drilling, composite, dynamic,

Abstract.
The new industrial challenges, conditioned by the diminution of conventional materials, suppose the integration on a larger scale of composite materials. Advanced and diversified solutions are absolutely necessary in order to obtain dynamic characteristics of high performs. Thus, the machining technologies are subject to more severe cutting conditions from a dynamic point of view. The drilling process of composite materials represents a source of high dynamic variations of the processing parameters. The variation of mechanical actions and vibrations are generated as a result of the contact between tool and different components of material. In order to know the qualitative and quantitative condition of the tool during the drilling, an experimental device was implemented. It allows real-time monitoring of the mechanical actions of the tool in relation to the part material as well as the analysis of the measured dynamic parameters. An experimental procedure based on dynamometric technology and monitoring sensors is designed to provide the dynamics characteristic during the drilling process.