Recent SQUID Activities in Europe, Part II: Applications

Alex I. Braginski[1] and Gordon B. Donaldson[2]

[1]Forschungszentrum Jülich, GmbH (FZJ), D-52425 Jülich, Germany
[2]Dept. of Physics, University of Strathclyde, Glasgow G4 0NG, Scotland, UK
E-mail: a.braginski@fz-juelich.de; g.b.donaldson@strath.ac.uk

Abstract – We present an overview of recent superconducting quantum interference device (SQUID) research and development in Europe. History, theory and fundamental experiments and especially practical SQUIDs and SQUID readout were covered by Part I of this overview. Today, the SQUID itself is a rather mature device, the most sensitive magnetic flux and field detector, which finds use also as an amplifier. The current research and development work concentrates mostly on the more traditional and novel applications presented here. We briefly characterize the evolution and status of the following applications: biomagnetic (mostly medical), radiation and particle detection, geomagnetism and related, nondestructive evaluation of materials and structures (NDE), metrology, and fundamental scientific experiments. Some of these found practical acceptance, while the promise and potential of others remains largely unfulfilled. Of all these, the radiation and particle detectors attract presently the most interest and are in a phase of fast development.

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