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22. The apparatus of claim 20, further including a superconducting electrical ground plane parallel and proximate to the SQUID, the ground plane forming at least one hole for concentrating magnetic field lines from one of either the signal coupling coil or the feedback coupling coil to the hole. 5

23. The apparatus of claim 22, wherein the ground plane additionally forms a gap from the hole to the edge of the ground plane for admitting magnetic flux.

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24. A method of damping resonances in a planar geometry multiturn superconducting coil comprising the steps of:

placing a plurality of resistors parallel and proximate to the coil;

and electrically connecting a plurality of turns of the coil internally with the resistors.

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