Superconducting Quantum Arrays with High Spurious-Free Dynamic Range

V. K. Kornev[1], N. V.Kolotinskiy[1], I. I. Soloviev[2], A. V. Sharafiev[2], O. Mukhanov[3]

[1]Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia
[2]Skobeltsyn Inst. of Nuclear Physics, Lomonosov Moscow State University, Moscow, Russia
[3] Hypres, Inc., 175 Clearbrook Road, Elmsford, NY 10523, USA

E-mail: kornev@phys.msu.ru

Abstract — Development of broadband superconductor sensors / amplifiers capable of providing high Spurious-Free Dynamic Range is now fairly specialized, especially in the frame of broadband receiving systems with direct digitizing. This paper is to review our theoretical and experimental results on Superconducting Quantum Arrays suggested for development of the broadband sensors / amplifiers, including active Electrically Small Antennas.

Keywords (Index Terms) — Josephson junctions, Superconducting Quantum Arrays, quantum cells, active antenna, linearity, dynamic range.