ALEXEY RADOVINSKY, Ph.D
Group Leader, Design and Analyses
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QUALIFICATIONS

- Over 30 years of design management, research and engineering in the fields of electromagnetics, electromechanics, mechanics of solids, thermodynamics, cryogenics for superconducting and normal magnets. 15 years of teaching college courses on theoretical mechanics and structural analysis. 20 years of providing leadership and comprehensive engineering support for projects from conception through design, fabrication, assembly and commissioning.
- Expert control of various computational programs instrumental in EM analyses, Tosca, ANSYS, Poisson Superfish, multiple proprietary codes for EM field/force calculations, as well as general analytical tools, Fortran, Mathematica, Mathcad, Excel, etc.

EXPERIENCE

System design and manufacturing management, numerical and analytical static and dynamic modeling, and optimization, eddy current and circuit analyses, magnetic, structural, thermal, and thermohydraulic analyses of various electromagnetic systems.

- *Engineering Design Management:* Led a group of engineers, analysts, designers and technicians through all stages of numerous projects from inception to commissioning, played a leading role in system integration, resolving technical issues, finding innovative technical solutions;
- *Electromagnetics:* Design, modeling and optimization: solenoids, racetracks, double helix, quadrupoles, iron, permanent magnets, steady state and transients, eddy currents, inductive charging; SC conductor: stability, quench, quench detection and protection, temperature margins; Voltage on insulation; Beam dynamics; Electrostatics; Tolerances: manufacturing, assembly, field verification and adjustments procedures; Sensitivity analyses, Fault analyses; Passive and active shielding; SC joints;
- *Structural:* Static and dynamic analyses, design and optimization of magnet support structures; Pressure vessels; Conductor integration;
- *Thermal and Cryogenics:* Pool boiling, conduction cooled, forced flow, thermal siphon, cryocoolers; Cryocooler fast couplers; Radiation shields; Current leads; Cold mass support; CICC hydro-thermo-magneto simulations;
- *Magnetomechanics.* Levitation: EDS maglev, controlled dipole; Propulsion: LSM and LIM; Mechanical stability and control; Track switches: passive and active; Vehicle suspension: design and control; Maglev ride quality; EM drivers.
- *Projects:*. LANL 20 MeV High Current Compact Cyclotron, ITER CS Quench Detection System, LANL Compact Ironless Synchrocyclotron, JLAB Hall B Torus, Solenoid, Dipole and Quadrupole Magnets, Hall D Replacement Solenoid, High Current 250 MeV Proton Compact Superconducting Isochronous Cyclotron (Megatron), Cyclotron for Proton Radiography (K250), Holloman Airbase Maglev Test Track; Magnetic Separation Drum for Water Treatment; Muon to Electron Conversion Experiment (MECO), Ribbon Beam Amplifier (APPM), Focusing Quadrupoles (IFE/AHF/HCX/PRAD), MagLifter Launch Assist Sleds, Levitated Dipole Experiment (LDX), Permanent Magnet Transportation System (OreCar), ITER USPP CS Joint tested at the Pulsed Test Facility at MIT (PTF), Tokamak Physics Experiment (TPX), International Thermonuclear Experimental Reactor (ITER) and CSMC Test Program, GEM, a superconducting magnet for Superconducting Super Collider (SSC), National Maglev Initiative (NMI), contracts with Magplane Technology, Inc., Cambridge Water Technology, etc.

MIT, PSFC:
April 2011-Present – Project Manager, Group Leader
May 1991–April 2008 – Project Design Leader, Research Engineer
General Atomics, Electromagnetics Systems Division, NORTHEAST:
April 2008- April 2011. Project Design Manager
Moscow Institute for Instrument Engineering:
1983–May 1991. Professor, Deputy Head of the Department of Theoretical Mechanics
Institute for Problems in Mechanics, U.S.S.R. Academy of Sciences, Mechanics of Solids:
1975–1983. Research Scientist, Part-time Assistant Professor

EDUCATION

- Ph.D., Institute for Problems in Mechanics, U.S.S.R. Academy of Sciences, 1975–1980
- B.S., M.S. (summa cum laude) in Spaceship Design, Moscow Aviation Institute, 1969–1975

PUBLICATIONS

Over 100 publications in Journals and Conference Proceedings, 4 US Patents, more pending.