Advanced Accelerator Concepts Workshop
June 23-28, 2002
Mandalay Beach Resort, CA

Working Group: EM Structure-Based Acceleration
Leader: John Power (ANL)

The primary purpose of this working group will be to review the recent progress and take note of the future directions in the development of structure-based and vacuum acceleration concepts. This class of advanced acceleration schemes is broadly defined to include devices in which macroscopic structures are an integral part of the method. These schemes span the electromagnetic spectrum from microwave to optical as well as wakefield structures powered by beams. Characteristics such as maximum acceleration gradients, scaling in length, beam quality requirements, system impacts and advantages, etc. will be discussed. Key issues that still need to be addressed for each scheme will also be identified. In addition to the fundamental considerations outlined above attention will be given to practical issues.

By the end of the workshop we also plan to summarize (a) the capabilities of the power sources needed for the various acceleration schemes, (b) the feasibility of fabricating the macroscopic structures to necessary tolerances, (c) the material damage limits of the acceleration devices, and (d) identify other applications of these devices outside of the high-energy physics community.