Summary of Panel Discussion
(From notes taken by A. Piepke and J. Busenitz)

Mike Shaevitz
Three comments:

1. Goal of experiment on $(\sin 2\theta_{13})^2$ should be 0.01 at 3σ. How to do this not yet clear. Staged approach possible. Stage 2 uses 2 or 3 far detectors and 1 near detector. Stage 1 uses 1 near and 1 far. This could give clear path to experiment. Stage 1 could aim to achieve 0.02 at 90% C.L and give experience on backgrounds, etc.

2. Key to make this all work is to secure a reactor site. This is the number one task. Difficult to secure a site. Little or no incentive for reactor companies (in U.S.) to do that. Perhaps climate in Japan is better? 1 M$ annual lease payments to host company are feasible.

   Efforts to secure a site appear to be ahead in Russia and Japan. In particular, the Russian site with reactor and experimental halls exists and is available.

3. International collaboration. This is also difficult. At present it works as it should, namely, each region pursues its own idea. At some point a site might become available. One should then form a collaboration. Eventually should do only one experiment.

Thierry Lasserre

Written document available (posted on the workshop web site) which summarizes the current European outlook. It includes background estimates. Goal is to reach 1% in systematic error. H. de Kerret has done studies which show this goal is realistic. Goal of 0.01 at 3σ on $(\sin 2\theta_{13})^2$ is not realistic.

Clear that one should build monolithic detectors. Possible designs:

1. Three–layer detector (Chooz–like). Drawback is that one has to deal with Gd–loaded scintillator.

2. "KamLAND/Borexino". Problems with event reconstruction at edge. Some reliance on MC necessary.

No need for a phase 2. Enough knowledge exists to do experiment right in one stage and instead concentrate on systematics. (Comments from other panel members and audience: Baseline for phase 2 could be optimized from the experience of phase 1.)

Sites are a serious problem. 300 mwe depth needed. Kashiwazaki: very complicated. France: shallow depths. Krasnoyarsk: systematics may be too optimistic. U.S: possibility of site at 1.8 km at 600 mwe depth is appealing, but many political problems.

Fumihiko Suekane

Proposed schedule: Phase 1 started before 2007 (JHF start) and designed as a discovery experiment. Speed is important, so use exisiting technology and make cheap design in order to get funding more easily. Phase 2 needed if Phase 1 not sufficient. Start Phase 2 after JHF result in order to optimize baseline (if LBL has positive result) or improve limit (if LBL has negative result).

Kashiwazaki project seeks additional collaborators. In particular, what is sought is expertise in Gd–loaded scintillator, Chooz experience, help on electronics, calibration, and simulation, and independent cross–checks on detector design, background estimates,....

Valery Sinev

Choose site and unite efforts. Do the experiment as fast as possible. Then use time to prepare Phase 2. Make Phase 1 as fast as possible with limited goals, e.g. sensitivity to $(\sin 2\theta_{13})^2$ down to $\sim$0.02.

In Krasnoyarsk, construction could start within two years. A workshop at Krasnoyarsk in early August is proposed so that potential collaborators can see the site. (Audience: How much foreign money is needed to make experiment at Krasnoyarsk happen quickly? Answer: Cost unclear at this time. Local industry could fabricate large-scale mechanics for detectors. Audience: How certain is future of Krasnoyarsk reactor? Answer: expect reactor to operate until 2010 at least. General discussion: Important to do both phase 1 and phase 2 at same site? Question: How long would it take to secure the Kashiwazaki site? Answer from FS: Expect unofficial approval within 6 months but formal approval may take1-2 years. Audience comments: Site selection criteria needed.)