

Early Days of CDF Japanese Contribution

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Japanese participation in CDF and other experiments started under an agreement on “US-Japan collaboration in High Energy Physics” between DOE and Japanese MOMBUSHO, Ministry of Education, Culture and Science, signed in 1979. It was a result of fortunate circumstances and enthusiastic push from the leaders, Lederman and Panofsky on the US side and Nishikawa on the Japanese side, with the help of DOE officials. In case of the CDF collaboration, it was a perfect coincidence with the start of the new powerful collider, the Tevatron.

In the following years, the Japanese group made significant contributions that made lasting impact. One such accomplishment was the construction of a large thin wall superconducting solenoid of CDF, which provided a stable and strong magnetic field, a necessary prerequisite for a precision tracking system, one of the key strengths of the CDF detector. Learning from troubles with previous smaller solenoids, major innovations were made, and other large solenoids that followed all utilize the same technique to date.

Another technique that has been followed by other experiments is the scintillating tile-WLS fiber readout system of the CDF Endplug Calorimeter for RUN II. Bill Foster proposed it, but the Japanese group played a major role in refining the technique into a viable sampling calorimeter technique, while devising many necessary details in the course.