

E0054

The DNA Project. Graeme Winter*, Karen Ackroyd, Alun Ashton, Gleb Bourenkov, Gérard Bricogne, Sandor Brockhauser, Liz Duke, Eric Girard, Steve Kinder, Ludovic Launer, Pierre Legrand, Andrew Leslie, Katherine McAuley, Sean McSweeney, Lorenzo Milazzo, Colin Nave, Venkataraman Parthasarathy, Alexander Popov, Harry Powell, Raimond Ravelli, Lucile Roussier, Darren Spruce, Olof Svensson, Andrew Thompson, Takashi Tomizaki.

The DNA project[1] is a collaboration between European synchrotron sites and research laboratories to automate the collection and processing of X-Ray diffraction images from macromolecular crystals. DNA provides a single user interface to the control of the experiment, and a substantial amount of automation of the experiment, including:

- Screening of images, for example to look for ice rings
- Indexing & strategy determination, including exposure time recommendation
- Automated collection and processing of data
- Interfaces to databases up- and down- stream from the experiment
- Control of sample changing robots

The automation is performed by connecting together existing beam line control systems (pxgen++, ProDC) and existing data processing software (Mosflm, Labelit, Best) with an expert system capable of controlling the data collection and making decisions about the quality of the data.

DNA has been running successfully on beam lines at the ESRF and SRS, as well as “off line” at a number of lab sites, where it is used in conjunction with image plate detectors.

[1] <http://www.dna.ac.uk>