# Development of Z-Code, the Powder Diffraction Analysis Suite

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New Japanese Spallation Neutron Sources (JSNS), the Material and Life science Facility (MLF) of the Japan Proton Accelerator Research Complex (J-PARC) has been operated. Six different characterized powder diffractiomters (Super High Resolution (S-HRPD), High Throughput (iMATERIA), Engineering (TAKUMI), Total Diffraction (NOVA), High Pressure (PLANET) and Special Environment (SPICA)) have already put out the great data. In this situation, new powerful and useful analysis software for powder diffraction data in desired. Since 2004, the powder diffraction group in MLF has started to develop a new powder diffraction total analysis suite, which is called Z-Code. It is the integrated environment for finding out crystal structures using various analysis methods from powder diffraction data. It is the integrated environment for finding out crystal structures using various analysis methods from powder diffraction data. For example, it has the general functions of indexing, peak searching, structure matching from the data base, and conventional Rietveld anaysis. Z-Code also supports texture analysis, profile analysis, fourier synthesis and maximum entropy method as the advanced analysis components.

We have just released "Z-Rierveld"[1,2] as a component of Z-Code and step up efforts to use it as the Rietveld analysis software in J-PARC. It has a Graphical User Interface (GUI) and many powerful features for the refinement of crystal structures. Z-Rietveld has demonstrated nice refinements of a complicated structure models using multiple data sets, such as x-ray and neutron ones. In this paper, more features of Z-Code will be discussed in details.

References

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