 MLF Experimental Report	提出日 Date of Report April 20 2009
	装置責任者 Name of responsible person Fujio Maekawa
課題番号 Project No. 2008A0028	装置名 Name of Instrument/(BL No.) BL10
実験課題名 Title of experiment Experimental test of TOF-MIEZE spectrometer	実施日 Date of Experiment Jan.23-26 2009 Feb.13-16, 17-19 2009
実験責任者名 Name of principal investigator Masahiro Hino	
所属 Affiliation Research Reactor Institute, Kyoto University	

試料、実験方法、利用の結果得られた主なデータ、考察、結論等を、記述して下さい。(適宜、図表添付のこと)
 Please report your samples, experimental method and results, discussion and conclusions. Please add figures and tables for better explanation.

1. 試料 Name of sample(s) and chemical formula, or compositions including physical form.

The aim of this proposal is to establish Time-Of-Flight (TOF)-MIEZE(Modulated Intensity by Zero Effort) spectroscopy experimentally and demonstrate that TOF-MIEZE spectrometer is compact and powerful tool to investigate dynamics in material. As shown in Fig.1, there are no optical components between the sample and the detector. Even in case of magnetic scattering, the contrast of MIEZE signal is not reduced, whereas the signal of NSE and NRSE spectrometers becomes very small in that case.

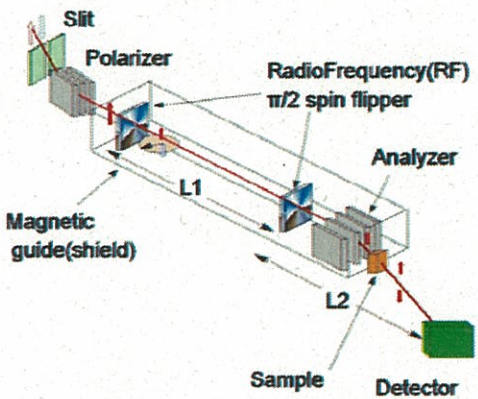


Fig.1 Schematic view of the MIEZE spectrometer

2. 実験方法及び結果 (実験がうまくいかなかった場合、その理由を記述してください。)
 Experimental method and results. If you failed to conduct experiment as planned, please describe reasons.

In the first beam time(Jan.23-26 2009), We tested each component, such as large-m NiC/Ti bender supermirror, polarizing and analyzing supermirrors and resonance spin flippers and detectors for a preliminary MIEZE spectrometer. As a first step, we carried out spin flip test at the NOBORU port as shown in Fig. 2. (I would like to mention that it is first spin flip test at J-PARC). In the second beam time(Feb.13-16,17-19), We installed the preliminary MIEZE spectrometer to at the BL-10(NOBORU) at J-PARC as shown in Fig.3(a) and succeeded in observing TOF-MIEZE signals with high contrast(Fig.3(b)). The maximum contrast of the TOF-MIEZE signal was above 0.8 and the effective frequencies were from 0.1 to 100 kHz(Fig.4). We got good experimental data for TOF-MIEZE spectroscopy.

2. 実験方法及び結果(つづき) Experimental method and results (continued)

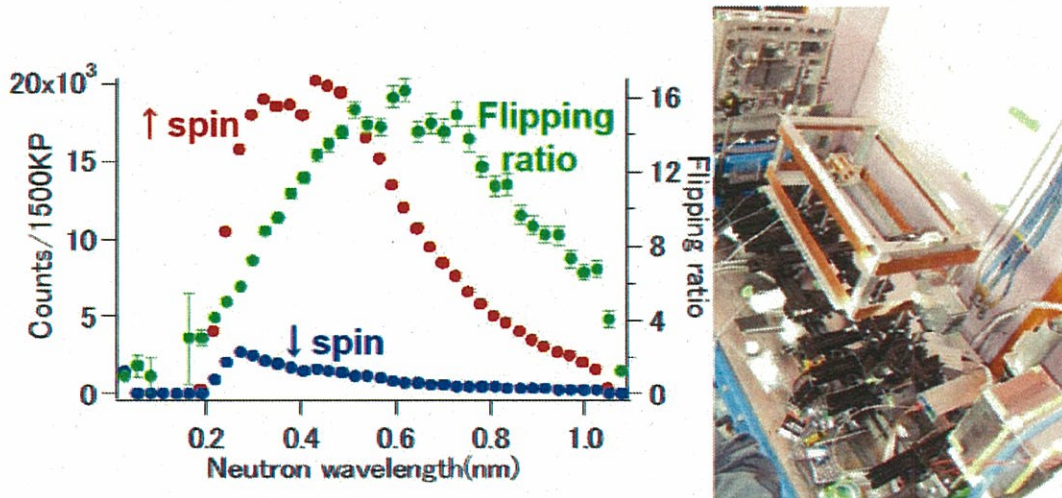


Fig.2 Neutron spin flip test by using RSF at NOBORU(BL-10) of J-PARC.

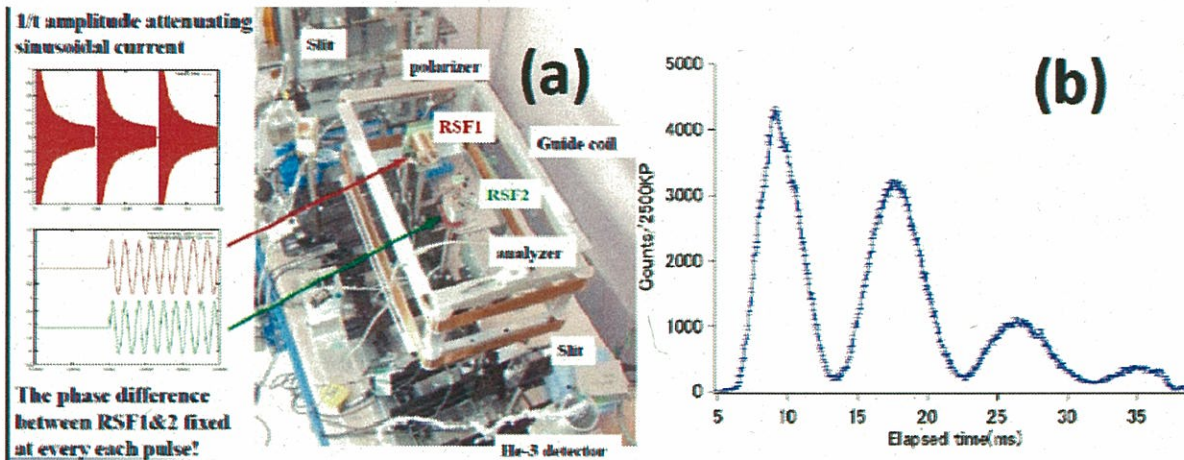


Fig.3 (a) The experimental setup for the MIEZE spectrometer and (b) first MIEZE signal at NOBORU(BL-10) of J-PARC.

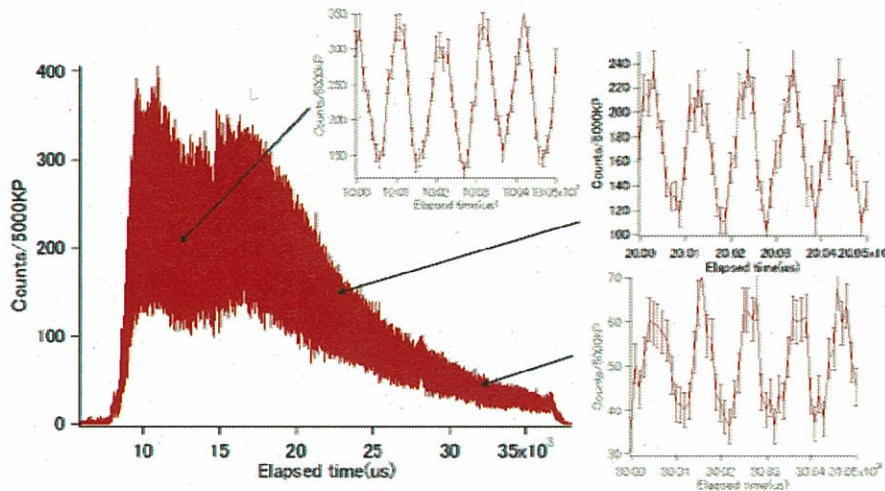


Fig.4 The observed 100kHz MEZE signal with 1/2 inch He-3 detector.