Meeting Recap XVII
March 6, 2018

Valentin Besse[1], Vladimir Vlasov, Anton Golov, Alexandr Alekhin, Dmitrii Kuzmin and Vasily Temnov

- Valentin Besse.
- Vladimir Vlasov.
- Anton Golov.

Agenda

During this meeting we discuss about:

1. magnetization dynamics induced by strain dependent exchange interaction mechanism (see Sec. 1).
2. travel of Valentin to Syktyvkar and Saint-Petersburg (see Sec. 2)

1 Magnetization dynamics induced by strain dependent exchange interaction mechanism

Anton studied the magnetization dynamics induced by strain dependent exchange interaction mechanism excited by one acoustic pulse or used a non zero initial condition for m_z (when the only interaction is the exchange interaction). **Anton** calculated for different cases:

- only the exchange interaction:
  - constant exchange field (D).
  - strain dependent mechanism ($D' = D + D\epsilon_{zz}$).
  - strain dependent mechanism ($D' = D + D\epsilon_{zz}$) with the initial condition's amplitude ten times higher than the previous one.
- magnetoelastic interaction:

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- without the exchange interaction
- with constant exchange field (D).
- with strain dependent mechanism ($D' = D + D\epsilon_{zz}$).

The data can be download here. It appears that the contribution of the strain dependent exchange is much smaller than the magnetoelastic interaction. Also the strain dependant exchange interaction does not lead to a different dynamics than the constant exchange interaction's one.

Anton will do some simulations with multiple acoustic pulses excitation.

2 Travel of Valentin to St-Petersburg and Syktyvkar

Valentin will travel to St-Peterbsurg from June 3rd to June 10th and to Syktyvkar from June 10th to June 17th. **Vladimir** confirmed that Syktyvkar (university ?) will pay for hotel and food expense while **Valentin** will be in Syktyvkar **Valentin** submitted his abstract, now **Vladimir** will ask L.N. Kotov and I.V. Bychkov to obtain that **Valentin**'s talk will become invited. **Valentin** will go to the administration to settle the last detail and start the process for a VISA.

New tasks

The new tasks are:

- do the simulation for a series of acoustic pulses, by exemple one hundred, and play with the delay between them. The idea is to determine the parametric resonant frequency.

Next meeting

The next meeting will be **Tuesday March 13th at 11:30 am (CET)**.

List of abbreviations

Landau-Lifschitz-Gilbert	$\Longrightarrow$	LLG
Ferromagnetic resonance	$\Longrightarrow$	FMR