General comments for all readings

There is a wide range of material in these readings.

For some of you, the readings will be just at the right level.

For others, particularly those who are uncomfortable with mathematics, they may seem daunting. Do not let this discourage you. We will go over them in class. The goal is to make you, if not comfortable, at least not uncomfortable, with the basic tools used in DTI and as we saw in the first Lecture, virtually every journal article on DTI contains descriptions that allude to these mathematical methods. In the long run, this will make you more comfortable with reading the literature and, perhaps, negotiating your own research questions.

For some of you, certain reading will be very familiar to you already. I would ask those individuals to view these readings as proofreading. I would be most appreciative if you would point out errors, typos, or perhaps unclear statements or discussions that might be clarified.

Sections marked with an asterisk (*) are advanced and not required reading.

Comments for Lecture 2 readings

In these reading we will cover the most basic mathematic elements in the course: vectors, matrices, and complex numbers. The "tensor" in diffusion tensor imaging is just a matrix (at least in the simple form of DTI) so this should be motivation enough. This matrix can be thought of as composed of vectors, so you'll need to know what those are as well. And complex numbers are just a simple mathematical device that greatly simplifies the handling of many of the equations of DTI and MRI and make the notation much simpler as well.