Assignments Week 9 SF2705 Fourieranalysis.

These are the things that you are expected to do before the Lecture on the **8th of April**.

1 Reading: Read chapter 5.1.4 to 5.1.5, pages 136-142.

2 Discussion questions.

1. After introducing the Schwatrz space, we mentioned that the Gaussian is an *important* example of a Schwartz function. But what makes it so important?

2. We start with considering a particular function $g \in S(\mathbb{R})$ with the property that $\hat{g} = g$, and then we get the desired Fourier inversion formula. How? Think abouth it!

3. We prove the Plancheval formula. Does it remind you of a corresponding (identical) formula from the theory of Fourier series?

3 Problems to consider: Do **2, 3, 4** and **5** in Stein-Shakarchi pp. 161-162.

4. Assignment for the 8th of April: Hand in a solution of exercise **1** on p. 161 in Stein-Shakarchi on Tuesday the 8th of April.

5 Office hours: It does not seem to be any need for office hours. In case you have any pressing question please write me an email (johnan@kth.se) and we can book a time on Friday.