



UiO : **Department of Physics**
University of Oslo

FYS5310/FYS9320

Lecture 2 – The atomic form factor

25.01.2017

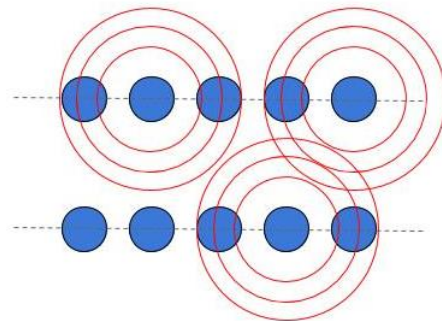
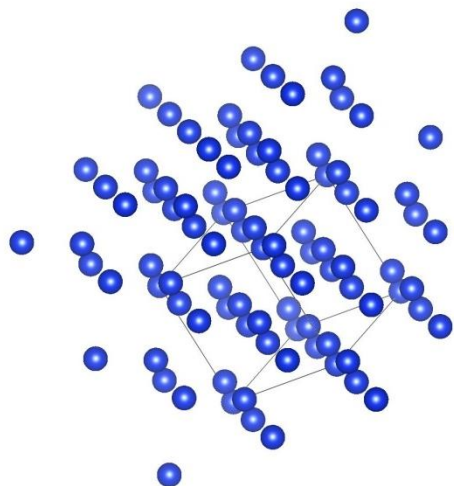
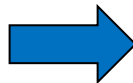


FYS5310 teaching schedule

Preliminary schedule only! You should keep the class-times on Wednesdays and Thursdays open unless notified by email (or in this schedule) that there is no class

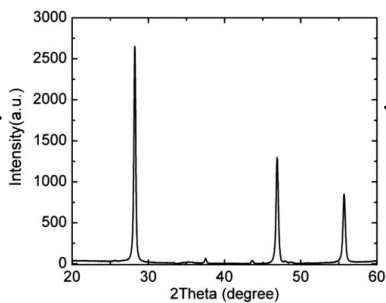
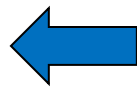
References to the textbook to Fultz & Howe unless stated otherwise.

Date		Time	Lecture/lab	Topic	Chapters	Homework
Wednesday	18.01.2017	14:15-16:00	Lecture	Introduction to the course. Derivation of the structure factor (01)	4.1, 4.3.1, 6.1	Exercise set 1 (handout)
Thursday	19.01.2017	12:15-14:00	Lecture	No class (SMN seminar)		
Wednesday	25.01.2017	13:15-16:00	Lab/Colloquium	Going through exercise set 1 + Lecture: The atomic form factor (02)	4.3	Excercise set 2 (handout)
Thursday	26.01.2017	12:15-14:00	Lecture	No class		
Wednesday	01.02.2017	14:15-16:00	Lab/colloquium	Going though exercise set 2		
Thursday	02.02.2017	12:15-14:00	Lecture	Instrumentation and inelastic cross sections (03)	5.4.1-5.4.3	
Wednesday	08.02.2017	12:15-16:00	Lab/colloquium			
Thursday	09.02.2017	12:15-14:00	Lecture			
Wednesday	15.02.2017	12:15-16:00	Lab/colloquium			
Thursday	16.02.2017	12:15-14:00	Lecture			
Wednesday	22.02.2017	12:15-16:00	Lab/colloquium			
Thursday	23.02.2017	12:15-14:00	Lecture			
Wednesday	01.03.2017	12:15-16:00	Lab/colloquium			
Thursday	02.03.2017	12:15-14:00	Lecture			
Wednesday	08.03.2017	12:15-16:00	Lab/colloquium			
Thursday	09.03.2017	12:15-14:00	Lecture			
Wednesday	15.03.2017	12:15-16:00	Lab/colloquium	No class		
Thursday	16.03.2017	12:15-14:00	Lecture	No class		
Wednesday	22.03.2017	12:15-16:00	Lab/colloquium			
Thursday	23.03.2017	12:15-14:00	Lecture			
Wednesday	29.03.2017	12:15-16:00	Lab/colloquium			
Thursday	30.03.2017	12:15-14:00	Lecture			
Wednesday	05.04.2017	12:15-16:00	Lab/colloquium			
Thursday	06.04.2017	12:15-14:00	Lecture			
Wednesday	12.04.2017	12:15-16:00	Lab/colloquium	No Class		
Thursday	13.04.2017	12:15-14:00	Lecture	No class (Maundy Thursday)		
Wednesday	19.04.2017	12:15-16:00	Lab/colloquium			

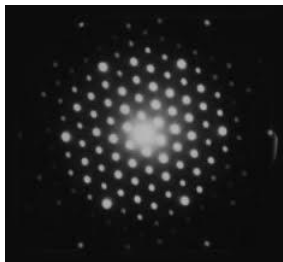
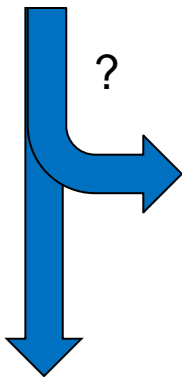


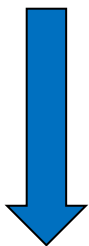
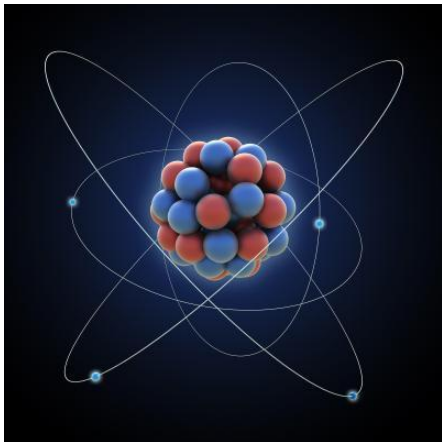
$$F(\Delta\mathbf{k}) = \sum_{j=0}^N f_j e^{-2\pi i \Delta\mathbf{k} \cdot \mathbf{R}_j}$$

$$I = |F(\Delta\mathbf{k})|^2$$

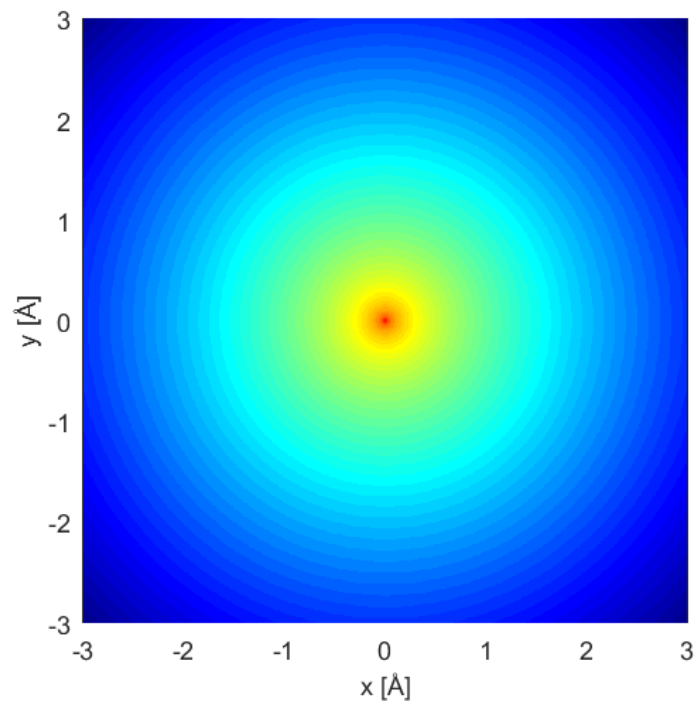
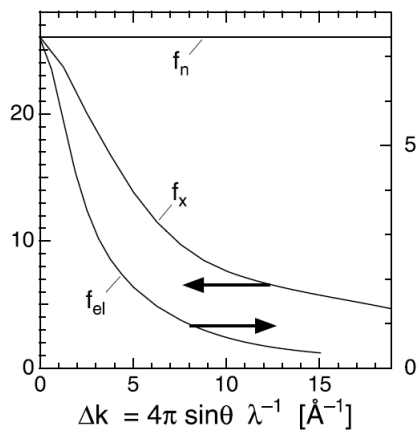


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- See derivation of form factors in the lecture note or in the textbook.

Some questions

- Why is there a difference in the shape of f for different radiation?
- Could f change even if the same radiation is used? How/why?

