

## **AVVISO DI SEMINARIO**

Dipartimento di Fisica  
Università di Pisa  
Largo Pontecorvo 3, Pisa  
Aula 248 INFN (Edificio C)

**Martedì 9 ottobre, ore 15**

**Prof. Martin Holthaus** (Carl von Ossietzky Universität, Oldenburg- Germania)

### **"Dressed Matter Waves"**

#### **Abstract**

For the development of the "dressed-atom picture" describing atoms in electromagnetic fields, the modification of the Lande g-factor by an oscillating magnetic field has played an important role.

This modification is closely related to a phenomenon known in solid-state physics as "dynamic localization". Although the dressed atom picture refers to a quantized radiation field, analogous results can be obtained for classical driving fields within the Floquet approach. This approach also describes recent experiments performed in Pisa with BECs in time-periodically modulated optical lattices, and points out interesting analogies to the dressed-atom picture. Thus, it is suggested that by subjecting a BEC in an optical lattice to a time-oscillating bias with carefully chosen parameters, one may obtain a matter wave with properties quite different from the "bare" condensate, i.e., a "dressed matter wave".

#### **Referenti:**

Prof. Ennio Arimondo - arimondo@df.unipi.it  
Dr. Oliver Morsch - morsch@df.unipi.it