Title of project: Impact of aging on the deleterious arterial effects of intermittent hypoxia

Objectives (3 lines max):
Characterize the aggravation by ageing of the damages induced by intermittent hypoxia in arteries. Identification of the structural and functional changes, as well as molecular mechanisms triggered by ageing.

Abstract (10 lines max):
Obstructive sleep apnea syndrome (OSAS), featuring intermittent breathing interruptions during sleep, is an important social and public health problem since its prevalence reaches ≈10-20% in adults and 50% or more in the elderly. OSAS is associated with daytime sleepiness, increased risk of accident, lower efficiency at work, as well as cardiovascular risk, with a cost of medical treatment alone of ≈1 billion euros/year in France. OSAS generates intermittent hypoxia (IH) leading to cardiovascular conditions, such as hypertension, cardiac infarct and insufficiency, vascular remodeling and arterial stiffening. The cardiovascular effects of IH during aging are debated, which is why the effects of IH on the structure and function of arteries of aged mice have to be studied. Two approaches, using cell culture of vascular smooth muscle cells and ex vivo study of large arteries structure and function, will be implemented.

Methods (3 lines max):
Culture of mouse vascular smooth muscle cells, ELISA, measurement of intracellular calcium levels by fluorescence microscopy, pressure arteriography, histology, ...

Relevant publications of the team (3 max):

Requested domains of expertise (few keywords): physiology, cell biology