32267 Sublethal effects of the combined exposure to metal mixtures and predator stress on Asellus aquaticusM. Van Ginneken, R. Blust, L. Bervoets, University of Antwerp / Systemic Physiological and Ecotoxicological Research Department of Biology. In aquatic ecosystems, trace metals often occur in mixtures in which they can strongly interact with each other, creating synergistic, additive or antagonistic toxic effects. Moreover, natural stressors such as temperature fluctuations or predators are present, which can increase the animals' vulnerability to these contaminants. However, classic toxicity tests are performed using single compounds without additional stressors and could thus lead to an over- or underestimation of the impact of metal exposure in the natural environment. This study investigates the effects of the combined exposure to predator stress and metal mixtures of copper, cadmium and lead on the freshwater isopod *Asellus aquaticus*. The chosen metal concentrations are equal to and tenfold of the environmental quality standards (EQS): 7 and 70 $\mu g.L^{-1}$ for Cu; 0.15 and 1.5 $\mu g.L^{-1}$ for Cd; and 7.2 and 72 $\mu g.L^{-1}$ for Pb. Animals were exposed to the different metals separately as well as to binary and tertiary mixtures. These metal treatments were combined with two predator treatments in which cues of both fish and invertebrate predators were absent or present. After ten days, various sublethal endpoints were assessed. Besides determining the metal accumulation and the growth rate of each animal, we mainly focused on behavioral endpoints such as swimming performance and feeding rate. Furthermore, the energy reserves (glycogen, protein and lipid concentrations), oxidative stress (SOD, CAT and TBARS) and respiration were measured. We hypothesized that metal accumulation, respiration and oxidative stress would be higher in the animals of the (metal) treatments with predator stress. However, we expected the animals of the treatments without predator cues to have higher feeding and growth rates, higher energy reserves and to be more active. This study will help to understand how anthropogenic and natural stressors interact and contribute to the development of ecologically relevant EQS.