TU184 TOXICITY AND BIOCONCENTRATION OF HEAVY METALS IN SEA STARS ASTERIAS RUBENS: MECHANISTIC APPROACH AND MODELING V. Fedvunin, Lomonosov Moscow State University, Faculty of Biology / General Ecology; A. Poromov, Lomonosov Moscow State University / Department of General Ecology; K. Kydralieva, Institute of Chemistry and Chemical Technology; A. Smurov, Lomonosov Moscow State University / Department of General Ecology. The growth of anthropogenic substances getting into the environment makes it difficult to evaluate the level of pollution, its changing over time, as well as optimization of the environmental and control activities. This issue is especially relevant to marine ecosystems due to the fact that the potential toxic effects of pollutants in marine environment and marine organisms are significantly different from those effects observed in fresh water, and are not yet studied enough. Thus, it is necessary to organize the monitoring of marine environments, the search and investigation of target values, including bio-indicators and representative bioassays. Promising research objects refer to the cells of the coelomic epithelium and coelomic fluid of Asterias rubens Linnaeus starfish, 1758 as primary or immortalized cell lines. High ecological plasticity of Asterias rubens starfish favors its wide population and resistance to anthropogenic influence and explains the potential of using those species as model organisms across large areas and in conditions of high anthropogenic load levels. During the toxicological experiments with heavy metals changes at the level of cells of the coelomic fluid of starfish Asterias *rubens* were described, at the end of the experiment the content of heavy metals in the bodies of the starfish was determined. Copper is the most toxic metal with its high concentration provoking death of Asterias rubens starfish. The value of coelomocytes of various subpopulations is defined by the way of adaptation of starfish to a particular metal (metal accumulation in the body or its elimination). The ability to bioconcentrate decreases in the order Pb>Cu>Fe>Mn>Cd>Co. The high adaptability of starfish at the level of coelomic fluid cells is revealed and registered through absence of differences between the number of cells in experimental aquaria with high metal concentration and the control group. When speaking about the effect on the distribution of cell subpopulations, metals can be divided into two groups – those accumulated in the body showing the increase in the proportion of granulocytes, and those metals that are not accumulated showing the increase in the proportion of agranulocytes. Bioconcentration is more likely determined by the ability of metals to build insoluble complexes (hydrolyses constant) in sea-water.