

Workshop APPLIED MATHEMATICS: METHODS AND MODELING  
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**No-flux boundary problems with variable exponents**

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**Abstract:** The variable exponent partial differential equations represent the topic of many studies lately, and the interest manifested towards them comes also from the large range of possible applications, such those concerning electrorheological fluids, thermorheological fluids, elastic materials, image restoration, mathematical biology etc. At the same time, the so-called "no-flux" problems make the subject of various recent studies because the no-flux boundaries represent surfaces that are impermeable to some contaminants and such surfaces are quite common in nature. Our interest incorporates the two directions of research, and we base our work on the critical point theory and on variational arguments.