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Title: The influence of the anchoring energy strength on the hysteresis of light induced Freedericksz transition in confined light beams

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The influence of the nematic--walls anchoring energy strength on the hysteresis of light induced Freedericksz transition in a light beam with bounded cross-section was considered. The threshold values of Freedericksz transition and the values of director deviation jumps for the increasing and decreasing of incident light intensity were obtained numerically as the functions of anchoring energy value and incident light beam width. The allowable regions of light beam width,  $(K_3 - K_1)/K_3$ ,  $K_2/K_3$  parameters and anchoring energy values for which light induced Freedericksz transition is accompanied by hysteresis were determined. The parameter  $(K_3 - K_1)/K_3$  increasing and decreasing of the parameter  $K_2/K_3$  value leads to the expanding of hysteresis existence region by values of incident light beam width for all anchoring energy values. While the increasing of light beam width and the increasing of parameter  $(K_3 - K_1)/K_3$  values leads to increasing of the critical values of parameter  $K_2/K_3$  for arbitrary anchoring energy values.