Inverse bays of auroral absorption: A physical model

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A physical interpretation and model of appearance of so-called "inverse" bays of auroral absorption (AA), that is the bays at which the time of ascent essentially esceeds the drop time, are presented. The "inverse" AA bays are observed, mainly, in the dusk sector of the magnetosphere, or in a zone of western drift of AA bays. According to the model the additional electric field of divided charges is created at the initial phase of substorm, when particles drift from the magnetotail to the Earth. This field is responsible for the inertial term in the main drift equation. In frame of the mechanism suggested it is possible to explain unsolved problems in the drift theory and estimate a value of the additional electric field, that was found to be equal to 4x10e-05 V/cm.