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**On classification and invariants of second order non-parabolic linear partial differential equations in two variables**By: Bekbaev, U (Bekbaev, U.)<sup>[1]</sup>

PROCEEDING OF THE 25TH NATIONAL SYMPOSIUM ON MATHEMATICAL SCIENCES (SKSM25): MATHEMATICAL SCIENCES AS THE CORE OF INTELLECTUAL EXCELLENCE

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**Abstract**

The paper deals with second order abstract linear partial differential equations (LPDE) over a partial differential field with two commuting differential operators. In terms of usual differential equations the main content can be presented as follows. The classification and invariants problems for second order LPDEs with respect to transformations

$$x = x(x_i, \eta); y = y(x_i, \eta); u = h(x, y) v(x_i, \eta),$$

where  $x, y$  are independent and  $u$  is the dependent variable of the LPDE, are considered. Solutions to these problems are given for different subclasses of non-parabolic LPDE which appear naturally in the equivalence problem of LPDE. A criterion for reducibility of such LPDE to LPDE with constant coefficients is offered as well.

**Keywords**

Author Keywords: linear partial differential equation; change of variables; equivalence; invariant; fiber bundled space

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