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**Pseudodifferential Operators on  $\mathbb{R}^n$  with Variable Shifts**

The aim of the paper is the study of pseudodifferential operators with shifts of the form

$$Au(x) = \sum_{j=1}^N a_j(x, D)V_{h_j} + \sum_{j=1}^N b_j(x, D)T_{g_j}$$

where  $a_j(x, D) \in OPS_{1,0}^m$  and  $b_j(x, D) \in OPS_{1,0}^{m-\epsilon}$  ( $\epsilon > 0$ ) are pseudodifferential operators in the Hörmander classes, and  $V_{h_j}$  and  $T_{g_j}$  are shift operators of the form

$$V_{h_j}u(x) = u(x - h_j), \quad T_{g_j}u(x) = u(x - g_j(x)), \quad x \in \mathbb{R}^n$$

where  $h_j \in \mathbb{R}^n$  and the mappings  $g_j : \mathbb{R}^n \rightarrow \mathbb{R}^n$  have infinitely differentiable coordinate functions bounded with all their derivatives. We will investigate the Fredholm and semi-Fredholm properties of the operator  $A$  acting from  $H^s(\mathbb{R}^n)$  into  $H^{s-m}(\mathbb{R}^n)$  applying the limit operators method.