

GENERALIZED FRACTIONAL MAXIMAL OPERATOR ON  
GENERALIZED LOCAL MORREY SPACES

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**Abstract**

In this talk, we study the continuity properties of the generalized fractional maximal operator  $M_\rho$  on the generalized local Morrey spaces  $LM_{p,\varphi}^{\{x_0\}}$  and generalized Morrey spaces  $M_{p,\varphi}$ . We find conditions on the triple  $(\varphi_1, \varphi_2, \rho)$  which ensure the Spanne type boundedness of  $M_\rho$  from one generalized local Morrey space  $LM_{p,\varphi_1}^{\{x_0\}}$  to another  $LM_{q,\varphi_2}^{\{x_0\}}$ ,  $1 < p < q < \infty$  and from  $LM_{1,\varphi_1}^{\{x_0\}}$  to the weak space  $WLM_{q,\varphi_2}^{\{x_0\}}$ ,  $1 < q < \infty$ . We also find conditions on the pair  $(\varphi, \rho)$  which ensure the Adams type boundedness of  $M_\rho$  from one generalized Morrey space  $M_{p,\varphi^{\frac{1}{p}}}$  to another  $M_{q,\varphi^{\frac{1}{q}}}$  for  $1 < p < q < \infty$  and from  $M_{1,\varphi}$  to  $WM_{q,\varphi^{\frac{1}{q}}}$  for  $1 < q < \infty$ . In all cases the conditions for the boundedness of  $M_\rho$  are given in terms of supremal-type integral inequalities on  $(\varphi_1, \varphi_2, \rho)$  and  $(\varphi, \rho)$ , which do not assume any assumption on monotonicity of  $\varphi_1(x, r)$ ,  $\varphi_2(x, r)$  and  $\varphi(x, r)$  in  $r$ .

**Keywords:** Generalized fractional maximal operator; generalized local Morrey spaces.

**References**

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