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**1027.47025****Karlovich, Alexei; Karlovich, Yuri; Lebre, Amarino****Invertibility of functional operators with slowly oscillating non-Carleman shifts.** (English)

Böttcher, Albrecht (ed.) et al., Singular integral operators, factorization and applications. Proceedings of the 12th international workshop on operator theory and applications, IWOTA 2000, Faro, Portugal, September 12-15, 2000. Basel: Birkhäuser. Oper. Theory, Adv. Appl. 142, 147-174 (2003). [ISBN 3-7643-6947-7/hbk; ISSN 0378-620X]

We prove criteria for the invertibility of the binomial functional operator

$$A = aI - bW_\alpha$$

in the Lebesgue spaces  $L^p(0, 1)$ ,  $1 < p < \infty$ , where  $a$  and  $b$  are continuous functions on  $(0, 1)$ ,  $I$  is the identity operator,  $W_\alpha$  is the shift operator,  $W_\alpha f = f \circ \alpha$ , generated by a non-Carleman shift  $\alpha : [0, 1] \rightarrow [0, 1]$  which has only two fixed points 0 and 1. We suppose that  $\log \alpha'$  is bounded and continuous on  $(0, 1)$  and that  $a, b, \alpha'$  slowly oscillate at 0 and 1. The main difficulty connected with slow oscillation is overcome by using the method of limit operators.

*Keywords* : invertibility; binomial functional operator; shift operator; slow oscillation; limit operators

*Classification* :

- \*47B38 Operators on function spaces
- 47A10 Spectrum and resolvent of linear operators
- 47A05 General theory of linear operators
- 47G10 Integral operators
- 47B37 Operators on sequence spaces, etc.

Cited in ...