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Francois Descouens* (francois.descouens@univ-mlv.fr), Fields Institute, 222 College Street, Toronto, ON M5T 3J1, Canada, **Nantel Bergeron** (bergeron@mathstat.yorku.ca), Department of Mathematics and Statistics, 2029 TEL Building, York University, Toronto, ON M3J 1P3, Canada, and **Mike Zabrocki** (zabrocki@mathstat.yorku.ca), Department of Mathematics and Statistics, 2028 TEL Building, York University, Toronto, ON M3J 1P3, Canada. *Generalization of (q, t) -Catalan numbers.*

We define new filtrations of the usual (q, t) -Catalan numbers by computing the image of certain k -Schur functions by the operator ∇ of F. Bergeron and al. In some particular cases, we give a combinatorial interpretation of these new polynomials in terms of nested Dyck paths. We also give and prove a combinatorial interpretation at $t = 1$. More generally, we give a conjecture of positivity (up to a global sign) of ∇ applied on any k -Schur function. (Received March 07, 2008)