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Edward C. Mosteig* (emosteig@lmu.edu), 1 LMU Drive Suite 2700, Department of Mathematics, Loyola Marymount University, Los Angeles, CA 90045. *Fixed Points of Maps on the Space of Rational Functions.*

Given integers s, t , define a function $\phi_{s,t}$ on the space of all formal series expansions by $\phi_{s,t}(\sum a_n x^n) = \sum a_{sn+t} x^n$. For each function $\phi_{s,t}$, we determine the collection of all rational functions whose Taylor expansions at zero are fixed by $\phi_{s,t}$. This collection can be described as a subspace of rational functions whose basis elements correspond to certain s -cyclotomic cosets associated with the pair (s, t) . We exhibit some of the properties of these cyclotomic cosets. (Received September 23, 2006)