962-57-913 **Jerome P Levine*** (levine@brandeis.edu), Mathematics Department, Brandeis University, Waltham, MA 02454, and **Stavros Garoufalidis** (stavros@math.gatech.edu), Mathematics Department, Georgia Institute of Technology, Atlanta, GA 30332. *Analytic invariants of boundary links.* Preliminary report.

Let $\Lambda = \mathbf{Q}[[x_1, \ldots, x_m]]$ be the ring of non-commuting power series with rational coefficents. In 1992 M. Farber defined an invariant $\chi(A) \in \Lambda$ for certain Λ-modules A which arise as the homology of the free cover of the complement of a boundary link. This is a generalization of the Alexander polynomial of a knot. We interpret, simplify and generalize this invariant in terms of Seifert matrices, defining, for any $f \in \mathbf{Q}[[z, x]]$, an invariant $\chi_f \in \Lambda$ of m-component boundary links. These invariants include Farber's, corresponding to a particular f, but the class of these invariants is stronger. For certain f, χ_f is related to the Kontsevich integral of a boundary link, generalizing the Melvin-Morton-Rozansky theorem which relates the Alexander polynomial of a knot to the colored Jones polynomial. (Received September 28, 2000)