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**Jose A Franco\*** ([jose\\_franco@baylor.edu](mailto:jose_franco@baylor.edu)), One Bear Place #97328, Waco, TX 76798. *Global  $SL(2, \mathbb{R})$  representations of the Schrodinger equation with time-dependent potentials.* Preliminary report.

We study the representation theory of the solution space of the one-dimensional Schrodinger equation with time-dependent potentials that possess  $\mathfrak{sl}(2, \mathbb{R})$ -symmetry. We give explicit local intertwining maps to multiplier representations and show that the study of the solution space for potentials of the form  $V(t, x) = g_2(t)x^2 + g_1(t)x + g_0(t)$  reduces to the study of the potential free case. We also show that the study of the time-dependent potentials of the form  $V(t, x) = cx^{(-2)} + g_2(t)x^2 + g_0(t)$  reduces to the study of the potential  $V(t, x) = cx^{(-2)}$ . Therefore, we study the representation theory associated to solutions of the Schrodinger equation with this potential. The subspace of solutions for which the action globalizes is constructed via nonstandard induction outside the semisimple category. (Received September 18, 2011)