1116-91-2537 **John K Osoinach*** (josoinach@udallas.edu), The University of Dallas, 1845 E. Northgate Dr., Irving, TX 75062, and **D Paul Phillips** (phillips@udallas.edu), The University of Dallas, 1845 E. Northgate Dr., Irving, TX 75062. *Searching With Lie Patterns of Infinite Length.* Preliminary report.

In the continuous version of the well-known Rényi-Ulam liar game, a Questioner is required to find a subset $A \subseteq [0,1)$ of smallest Lebesgue measure that contains a number x known only to a Responder. The Questioner asks the Responder questions of the form, "is $x \in T$?" for subsets $T \subseteq [0,1)$. The Responder's answers to these questions need not be truthful, but the choice to lie or be truthful is restricted to a set of allowable lie patterns X, known to both players at the beginning of the game. We analyze the variation of this game when the Questioner is allowed an infinite sequence of questions, so that the length of each lie pattern allowed is infinite. We show that the Questioner has a strategy that identifies a subset $A \subseteq [0,1)$ containing x whose Lebesgue measure equals the measure of X. We also show that when restricted to asking comparison questions, the Questioner can find a subset $A \subseteq [0,1)$ containing x whose Lebesgue measure exceeds the measure of X by ϵ, for any given $\epsilon > 0$. (Received September 22, 2015)