1077-30-1066 **Brian J. Cole** (Brian_Cole@brown.edu), Department of Mathematics, Brown University, Providence, Rhode Island 02912, U.S.A.. *A non-semialgebraic interpolation body* Preliminary report.

Let A be a uniform algebra on a set X, and fix distinct points $\zeta_1, \ldots, \zeta_n$ in X. The associated *interpolation body* is the set

$$\mathcal{E} = \{ (z_1, \ldots, z_n) \in \mathbf{C}^n \,\big|\, \forall \epsilon > 0 \ \exists f \in A, \ \|f\| < 1 + \epsilon, \ f(\zeta_i) = z_i, \ i = 1, \ldots, n \}.$$

Note that $\mathcal{E}$ is a compact, convex subset of $\mathbf{C}^n$. As a special case, consider $X = \Omega$, a complex manifold, and $A = H^\infty(\Omega)$. Pick's theorem describes $\mathcal{E}$ in terms of algebraic inequalities when Ω is the unit disk in $\mathbf{C}$, and hence $\mathcal{E}$ is a semialgebraic set in this case. More generally, it is known that $\mathcal{E}$ is semialgebraic when Ω is the unit bi-disk in $\mathbf{C}^2$ or a finite Riemann surface. In the negative direction, we prove the following

Theorem. *There exists an interpolation body $\mathcal{E}$ for a uniform algebra so that $\mathcal{E}$ is not semialgebraic.*

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