1137-17-7 **Garrett Johnson*** (gjohns62@nccu.edu). *Subprime solutions of the classical Yang-Baxter equation.*

We introduce a new family of r-matrices for the Lie algebra $\mathfrak{sl}_n$ that lies in the Zariski boundary of the Belavin-Drinfeld space $\mathcal{M}$ of quasi-triangular solutions to the classical Yang-Baxter equation. In this setting $\mathcal{M}$ is a finite disjoint union of components; exactly $\phi(n)$ of these components are SL_n-orbits of single points. These points are the generalized Cremmer-Gervais r-matrices $r_{i,n}$ which are naturally indexed by pairs of positive coprime integers, i and n, with $i < n$. A conjecture of Gerstenhaber and Giaquinto states that the boundaries of the Cremmer-Gervais components contain r-matrices having maximal parabolic subalgebras $\mathfrak{p}_{i,n} \subseteq \mathfrak{sl}_n$ as carriers. We prove this conjecture in the cases when $n \equiv \pm 1 \pmod{i}$. The subprime linear functionals $f \in \mathfrak{p}_{i,n}^*$ and the corresponding principal elements $H \in \mathfrak{p}_{i,n}$ play important roles in our proof. Since the subprime functionals are Frobenius in the cases when $n \equiv \pm 1 \pmod{i}$, this partly explains our need to require these conditions on i and n. We conclude with a proof of the GG boundary conjecture in an unrelated case, namely when $(i, n) = (5, 12)$. (Received November 10, 2017)