

# An upper bound for the minimum genus of a curve without points of small degree

Claudio Stirpe

**Claudio Stirpe** (clast@inwind.it)  
Università di Roma 'Tor Vergata'

**Abstract.** The problem of finding a non singular curve of genus  $g_n$  without points of degree smaller than  $n$  was already studied in [1] when the genus is small (compared to the size of the finite field  $\text{GF}(q)$ ). A construction of a family of curves without points of degree smaller than  $n$  was carried out by Clark and Elkies. The genus of such curves is bounded by  $g_n < n \cdot q^n$  for large  $n$ . In this talk I give a ray class field construction of a family of curves over the finite field  $\text{GF}(q)$  without points of degree smaller than  $n$  and of genus smaller than  $q^n$ .

## References

- [1] Howe, E; Lauter, K; Top, J. Pointless curves of genus three and four. *Séminaires et congrès*, **11** (2005), 125–141.