

## $n$ -th relative nilpotency degree and relative $n$ -isoclinism classes

RASHID REZAEI and FRANCESCO G. RUSSO

### ABSTRACT.

P. Hall introduced the notion of isoclinism between two groups more than 60 years ago. Successively, many authors have extended such a notion in different contexts. The present paper deals with the notion of relative  $n$ -isoclinism, given by N. S. Hekster in 1986, and with the notion of  $n$ -th relative nilpotency degree, recently introduced in literature.

### REFERENCES

- [1] Bioch, J. C., *On  $n$ -isoclinic groups*, Indag. Math. **38** (1976), 400–407
- [2] Bioch, J. C. and Van der Waall, R. W., *Monomiality and isoclinism of groups*, J. Reine Ang. Math. **298** (1978), 74–88
- [3] Chiti, K., Moghaddam, M. R. R. and Salemkar, A. R.,  *$n$ -isoclinism classes and  $n$ -nilpotency degree of finite groups*, Algebra Coll. **12** (2005), 225–261
- [4] Chow, Y. S. and Teicher, H., *Probability Theory: Independence, Interchangeability, Martingales*, Springer, Berlin, 1988
- [5] Erfanian, A., Lescot, P. and Rezaei, R., *On the relative commutativity degree of a subgroup of a finite group*, Comm. Algebra **35** (2007), 4183–4197
- [6] Erfanian, A. and Rezaei, R., *On the commutativity degree of compact groups*, Arch. Math. (Basel) **93** (2009), 201–212
- [7] Gallagher, P. X., *The number of conjugacy classes in a finite group*, Math. Z. **118** (1970), 175–179
- [8] Guralnick, R. M. and Robinson, G. R., *On the commuting probability in finite groups*, J. Algebra **300** (2006), 509–528
- [9] Gustafson, W. H., *What is the probability that two groups elements commute?*, Amer. Math. Monthly **80** (1973), 1031–1304
- [10] Hall, M. and Senior, J. K., *The Groups of Order  $2^n$  ( $n \leq 6$ )*, Macmillan, New York, 1964
- [11] Hall, P., *The classification of prime-power groups*, J. Reine Ang. Math. **182** (1940), 130–141
- [12] Hekster, N. S., *On the structure of  $n$ -isoclinism classes of groups*, J. Pure Appl. Algebra **40** (1986), 63–85
- [13] Hofmann, K. H. and Morris, S. A., *The Structure of Compact Groups*, W. de Gruyter, Berlin, 1998
- [14] Lescot, P., *Isoclinism classes and commutativity degrees of finite groups*, J. Algebra **177** (1995), 847–869
- [15] Robinson, D. J. S., *A course in the theory of groups*, Springer, Heidelberg, 1982

DEPARTMENT OF MATHEMATICS  
MALAYER UNIVERSITY  
FACULTY OF MATHEMATICAL SCIENCES  
POST BOX: 657719–95863, MALAYER, IRAN  
E-mail address: ras\_rezaei@yahoo.com

DEPARTMENT OF MATHEMATICS  
UNIVERSITY OF PALERMO  
ARCHIRAFI 34, 90123 PALERMO, ITALY  
E-mail address: francescog.russo@yahoo.com