Preface

The seventh meeting of the Contact Franco-Belge was held in Reims, June 26th to 30th, 1995. This conference, followed with great enthusiasm, was the occasion to numerous discussions among specialists with close mathematical interests. The goal of the meeting was the presentation of recent advances in several related subjects, in which, a non commutative algebraic approach, often turns out to be necessary.

The organization committee consisting of J. Alev, G. Cauchon, J. Calais, M. P. Malliavin, J.P. Tignol and F. Van Oystaeyen, encouraged the presentation of both original results and surveys. Thus, these proceedings contain three parts including sixteen papers: thirteen on recent results and three surveys.

In the first part, five papers on recent developments concerning classical problems are presented: S. Abhyankar's contribution on Hilbert's thirteenth problem, the survey of B. Keller on tilting theory, the paper of A. Melnikov and A.A. Kirillov on a remarkable sequence of polynomials, M. Van den Bergh's paper on a class of division algebras and A. Van den Essen's survey on the jacobian conjecture.

In the second part, one can find five papers on Hopf algebras, quantum groups and their representations, corresponding to the talks by S. Caenepeel, D. Gurevich, S. Khoroshkin, C. Ringel and L. Willaert. These articles deal with different aspects of the algebraic properties of quantum groups.

In the third part, there are six papers on invariant theory and representations, corresponding to the talks by M. Brion, A. Joseph, H. Kraft, L. Lebruyn, O. Mathieu et A. Melnikov. Invariant theory still continues to motivate numerous interesting results in various directions.

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