

## 1 Introduction

Computational kinematics (CK) is a domain which is slowly spreading in the mechanism community. We understand here under the term CK that branch of kinematics research involving intensive computation not only of the numerical type, but also of a symbolic or geometric nature. The TC on Computational Kinematics has now 15 members but will probably be expanded in the near future with at least a representative of South America.

## 2 Events of 1999-2000

Outside many communications between the TC members (mainly by e-mail) 3 main events must be mentioned:

- support of the Advanced in Robots Kinematics (ARK)
- organization of the next Computational Kinematics conference in 2001
- creation of the electronic journal *Electronic Journal of Computational Kinematics*

### 2.1 ARK

ARK is a successful workshop devoted to kinematics, in which many of the papers are related to computational kinematics. Hence it has been decided by the TC to support this workshop which is held every two years and has been organized this year by J. Lenarcic from June 24 to June 26 in Piran-Portoroz, a small slovenian sea resort. As this workshop will be held just before the IFToMM meeting it is not possible to give a full report of this event but this meeting should be quite interesting according to the planned program.

### 2.2 Computational Kinematics 2001

Computational kinematics (CK) is the other main conference in the field of our committee. It is normally held in alternance with ARK so that there is a workshop on CK each year. The last CK meeting was held in Sophia-Antipolis in 1995 and was organized by the current chairman of the TC. After this meeting it was decided to put D. Kerr in charge of organizing the 1997 CK. Unfortunately for some unknown reasons there was a mishap in the organization and finally the 1997 CK has not taken place. At the initiative of M. Ceccarelli a discussion was engaged among some members of the TC and it was decided to re-activate CK. We finally receive three proposals for the organization of this workshop:

1. University of Cassino (M. Ceccarelli)
2. University of Seoul (F. Park)

### 3. Napier University, Edinburgh (D. Marsh)

All these proposals were tempting but we finally decide to select the second proposal for the following reasons:

- there is an active Asian community in our field (especially in Japan, the PRC, Taiwan and the ROK) but this community does not participate much neither in the TC nor in the workshops supported by the TC. The TC believes that this is partly due to the lack of knowledge about the IFToMM activities in Computational Kinematics: having CK in Seoul may help to advertise our activity,
- the 2001 International Conference on Robotics and Automation (ICRA) will be also held in Seoul and F. Park, a member of the TC, agrees to organize the CK conference just before ICRA. We have here a golden opportunity:
  - as many participants of CK and ARK are usually also attending ICRA we may hope that the usual audience of CK will still attend CK 2001
  - we may benefit from the close-proximity of ICRA and CK as some attendees of ICRA that usually are not attending ARK or CK may decide to attend both conferences, especially as we intend to have a web link from the ICRA home page to the CK home page.

A "Call for Paper" for CK 2001 has been distributed during the 2000 ICRA conference that has been held in San Francisco.

## 2.3 Electronic Journal of Computational Kinematics

During 1998 a large discussion takes place among the members of the TC and in the community at large about the opportunity to propose an electronic journal on Computational Kinematics. This idea was proposed by the Chairman as one of the main objectives of the TC. Although it is quite innovative in MMT, such type of journal is nowadays quite accepted in other communities (for example in astronomy or artificial intelligence) where electronic journals are now completely accepted as reference journals.

Creating an electronic journal was motivated by three main reasons:

- the time gap between the submission of a paper and its publication in classical journals (although the IFToMM journal has a pretty good record in this field)
- the increase in the subscription prices of journals that may lead libraries to cancel subscriptions that are not deemed essential
- the fact that the computer is a natural media for computational kinematics offering large possibilities like animation, software exchanges and fair comparison between algorithms

The result of this discussions (which were sometime quite animated) was the opening in February 1999 of the official web site<sup>1</sup> of the journal *Electronic Journal on Computational Kinematics* (EJCK for short). But a main problem was identified: it was essential that EJCK becomes very quickly a reference journal, known to publish only the best papers, so that to attract both young researchers seeking a promotion and high quality papers. To reach this objective it was decided that the papers of the first issue shall be submitted by the members of

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<sup>1</sup><http://www.inria.fr/saga/EJCK/ECJK.html>

the TC, all well known in the field, thereby guaranteeing the quality of the issue. Unfortunately this approach was requiring a large effort of the members, all of them being very senior and hence being quite busy. The result was quite mitigated as only 4 members were able to submit papers. Although the quality of the proposed papers was high it was estimated that the number of paper was to low for publishing the first issue.

We have to consider quite carefully this failure and to draw some conclusions for the future. Two main issues must be considered:

- is the CK community so small that it cannot afford its own journal, with the corollary: shall we extend the scope of the journal?
- is the MMT community not yet ready for an electronic journal?

My personal feeling on both points is that the MMT community has not yet fully measured the impact of computers in our field. I believe that computers are still used at best as "black boxes" which provide interesting results: the facts that first computers are necessary to solve problems that will be otherwise out of reach and second that MMT algorithms may have to be thought in view of their implementation on computers is not yet fully understood by our community. But a role of a TC is to push innovation: hence we should not be discouraged by this first failure and still pursue the idea of EJCK. An idea is currently being investigated: the first issue of EJCK may be the proceedings of CK 2001.