

July 22, 2016

TO WHOM IT MAY CONCERN,

I have learned that Professor Marco Antonio Meggiolaro is being considered for promotion within the Department of Mechanical Engineering of PUC-Rio. Since I am familiar with his excellent research and am used to evaluating North American candidates for promotion to the rank of full professor I am writing this letter in support of his promotion. Assuming that the needs of Brazilian universities in technical areas are similar to ours I will address the areas of quality and independence of research publications, supervision of graduate students and the publication of their work, the quality of undergraduate teaching and the ability to interact productively with other department members and outside researchers.

PUBLICATIONS

The most impressive of Marco Antonio's publications is the three volume fatigue textbook he and Professor Jaime Castro published first in Portuguese and now in English. I reviewed and commented on both versions and consider it the best and most comprehensive book in the field of fatigue. I have used many examples taken from the series in my graduate courses. Because of the extensive collaboration of Meggiolaro and Castro I will try to separate their contributions to work in the field of fatigue. Meggiolaro's extensive work in the areas of control and robotics is entirely his own. The work in multiaxial fatigue, incremental plasticity and incremental plasticity all were a result of Meggiolaro's own work. I have worked in this area and have had many fruitful discussions with him. In my opinion his work is currently the best in the field. In other areas of fatigue the initiator of the work in Castro and Meggiolaro's contributions is invariably the first author. Meggiolaro's papers are published in good journals and conference proceedings and have received extensive citations. I have listened to a number of his presentations in Portuguese and English and discovered in France that he was also fluent in French. His presentations were logical clear and concise. Meggiolaro's publications exceed in quantity and quality the requirements for promotion to full professor in the best North American universities.

SUPERVISON AND PUBLICATION WITH GRADUATE STUDENTS

In evaluating a professor for promotion we expect that he will not only have supervised graduate students but also have published their thesis work with them. Professor Meggiolaro has graduated four PhD students and is currently working with five. He has graduated thirty seven MSc students and has five in progress. The work of these students the majority of them in his research areas of robotics and control has resulted in a large number of publications. The unusually large number of graduate students who chose to work with Marco Antonio is undoubtedly due to his Rio Botz project that has attracted one hundred and seventeen students to date and has resulted in a great number of championships in Brazil and in international competitions - an outstanding accomplishment by mechanical engineers in an area usually dominated by electrical and computer engineers.

TEACHING ABILITY

In his presentations at conferences Marco Antonio makes complicate subject matter (his work in multiaxial fatigue is certainly complicated) understandable even in English which for him is a second language. The same clarity must apply to his undergraduate students since he has been repeatedly

honoured as professor homenageado. His graduate course offerings are attended by an above average number of students. When I was in PUC on a number of occasions I talked to students who worked with him on projects for his robot competitions. They were very enthusiastic. In summary professor Meggiolaro's contributions to teaching are well above what most of us achieve.

INTERACTION WITH OTHER RESEARCHERS

There is strong evidence in his publications of a close collaboration between Marco Antonio and other researchers. I had the pleasure of working with him on a control problem related to fatigue testing and found it to be a rewarding experience. In discussing his and Castro's fatigue book and his VIDA fatigue analysis program I found him accepting of criticism and eager to talk about improvements. I found the same attitude in our discussions of multiaxial fatigue modelling. Cooperation between professors Marta, Castro and Meggiolaro has created a strong research group that merits the support of PUC. In my opinion their work is the best in Brazil in their area.

Sincerely,



T.H. Topper

Distinguished Professor Emeritus
Department of Civil and Environmental Engineering
The University of Waterloo
Canada

