



## ISTITUTO NAZIONALE DI RICERCA METROLOGICA Repository Istituzionale

The 2021 IAEA software intercomparison for k0-INAA

*Original*

The 2021 IAEA software intercomparison for k0-INAA / D'Agostino, Giancarlo; Blaauw, M.; Dung, H. M.; DI LUZIO, Marco; Jacimovic, R.; Da Silva, Dias; M., Semmler; Van, Sluijs; Pessoa, Barradas. - (2022).

*Availability:*

This version is available at: 11696/75979 since: 2023-02-22T14:04:09Z

*Publisher:*

*Published*

DOI:

*Terms of use:*

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

*Publisher copyright*

(Article begins on next page)

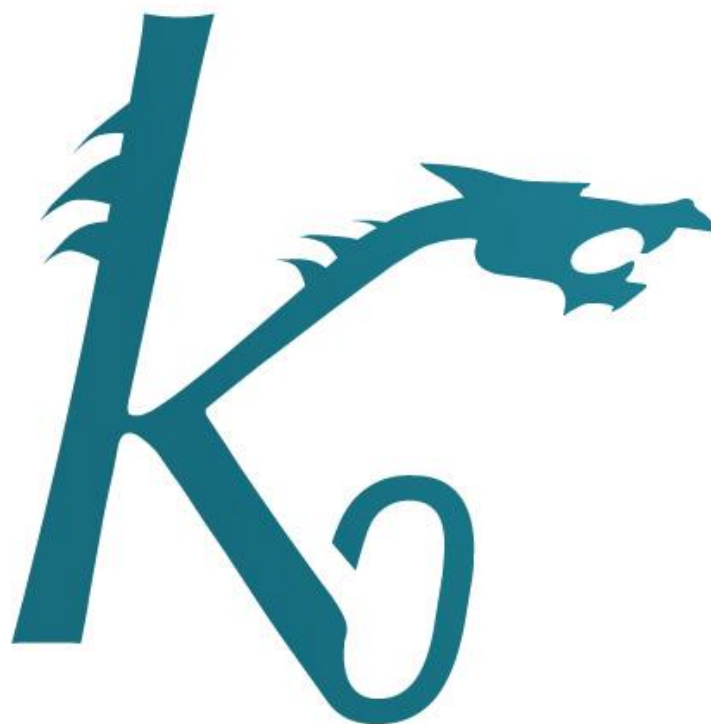
12 August 2023



8<sup>th</sup> International  $k_0$ -Users' Workshop  
6 – 10 June 2022  
Ljubljana, Slovenia

 Institut  
"Jožef Stefan"  
Ljubljana, Slovenija

# Book of Abstracts



**6 – 10 June 2022**  
**Ljubljana, Slovenia**



# Sponsors

International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 Vienna  
Austria

-----

k0-ware  
Schaesbergerweg 25  
6415 AB Heerlen  
The Netherlands

-----



No. 02

**The 2021 IAEA software intercomparison for  $k_0$ -INAA**

Giancarlo D'Agostino<sup>1</sup>, Menno Blaauw<sup>2,\*</sup>, Ho Manh Dung<sup>3</sup>, Marco di Luzio<sup>1</sup>, Radojko Jacimovic<sup>4</sup>, Mauro Da Silva Dias<sup>5</sup>, Renato Semmler<sup>5</sup>, Robbert van Sluijs<sup>6</sup>, Nuno Pessoa Barradas<sup>7</sup>

<sup>1</sup>Istituto Nazionale di Ricerca Metrologica (INRIM), c/o Department of Chemistry, University of Pavia, via Taramelli 12, 27100 Pavia, Italy

<sup>2</sup>Reactor Institute Delft, Delft University of Technology, Mekelweg 15, 2629 JB Delft, The Netherlands

<sup>3</sup>Center for Nuclear Technologies (CNT), 217 Nguyen Trai Street, District 1, Ho Chi Minh City, Vietnam

<sup>4</sup>Jozef Stefan Institute, Ljubljana, Slovenia

<sup>5</sup>Instituto de Pesquisas Energéticas e Nucleares (IPEN-CNEN/SP), Research Reactor Center (CERPq), Av. Prof. Lineu Prestes, 2242, São Paulo, SP, Brazil

<sup>6</sup> $k_0$ -ware, Schaesbergerweg 25, 6415 AB Heerlen, The Netherlands

<sup>7</sup>International Atomic Energy Agency, Vienna International Centre, PO Box 100, A-1400 Vienna, Austria

\*Corresponding author: [m.blaauw@tudelft.nl](mailto:m.blaauw@tudelft.nl)

## Abstract

In order to establish the variation between results due to software implementation in mass fractions as measured by the  $k_0$ -method for INAA, the IAEA has organized a software intercomparison. A complete set of test spectra and associated information was assembled. Efficiency curves, neutron spectrum parameters, correction factors and mass fractions were calculated with the participating programs (list of program names here) using identical peak areas. In this paper, we report on the observed discrepancies, causes, remedies and future software developments. The test data, as well as expected and certified mass fractions of the BCR-320R channel sediment sample material will be made available to all.