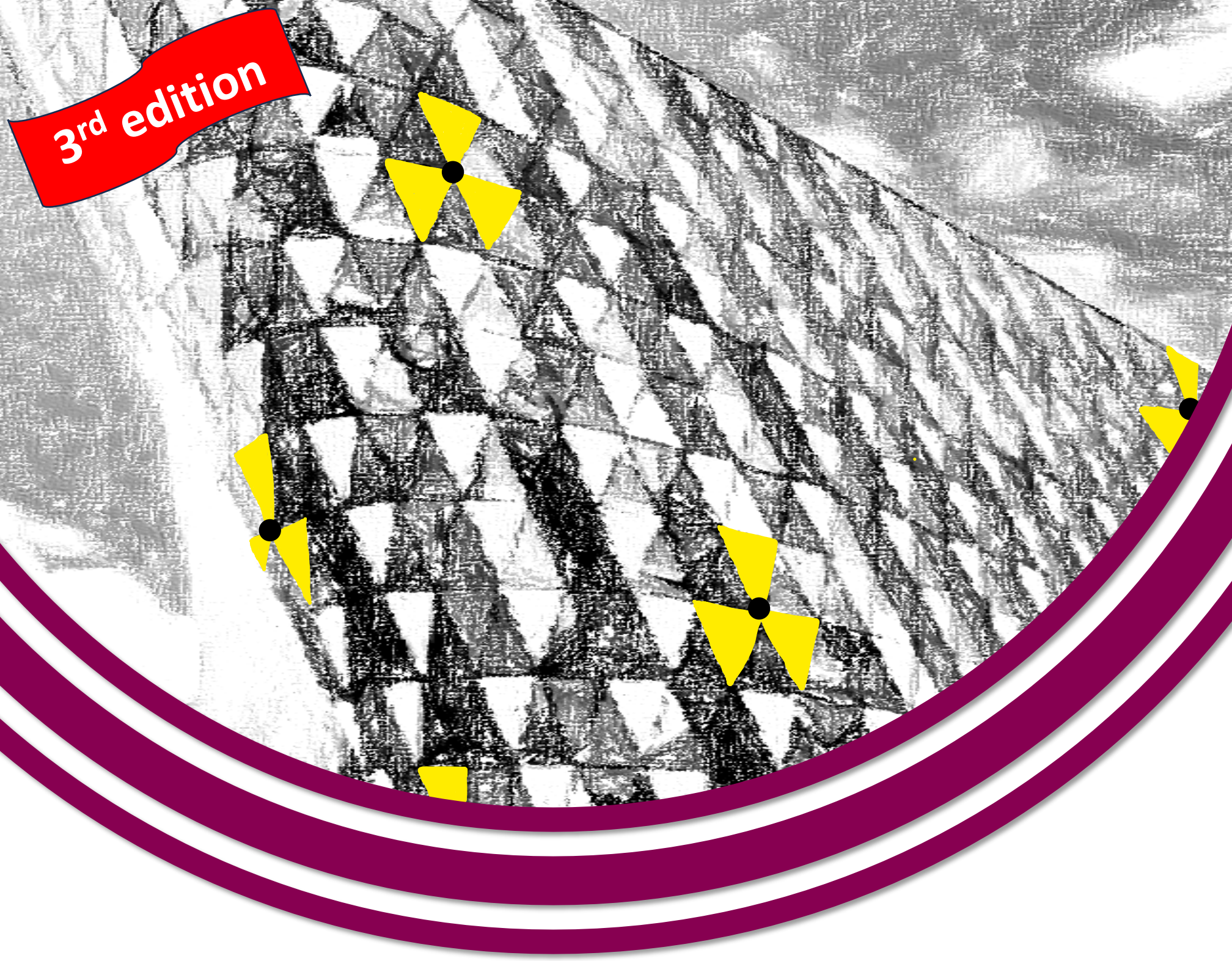

Applications of Ionizing Radiation in Therapy & Biomedical Research

PhD Course within the Tumour Biology and Oncology (FoTO) Doctoral Programme

Application period: 15 October – 5 November, 2026

Biomedicum

Solna

VT27

19-23 April 2027

Karolinska Institutet

Course Organizers:

Ahmed Osman

Adamantia Fragkopoulou

João Pedro Alves-Lopes

Purpose of the course: The course will provide a platform for obtaining advanced, cutting-edge pre-clinical and clinical knowledge in radiation therapy.

Course learning goals: At the end of the course the participants should be able to:

- describe and explain the fundamental principles of radiation and its biological effects on cells and tissues
- apply and follow radiation protection strategies in clinical and/or research settings
- design and justify a preclinical radiation research model
- describe the clinical applications of radiation and its side effects
- elaborate on strategies for how to prevent and/or alleviate the side effects of radiation therapy
- reflect upon radiation therapy from the patient's perspective
- critically discuss how their doctoral research relates to topics covered in the course

Course content:

- Basic physics and the biological effects of radiation
- A brief history of radiation therapy
- Radiation safety and protection
- Clinical applications of ionizing radiation
- Radiation therapy-associated complications and their potential treatments
- The future of radiation therapy
- Practical sessions (Cellular effects of radiation from the lab perspective, visit to the Radiotherapy department at KS)
- Patient's perspective: Meet a patient who has undergone radiation therapy

Additional Information:

https://doctoralcourses.application.ki.se/fubasextern/info?kurs=K6F6043

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