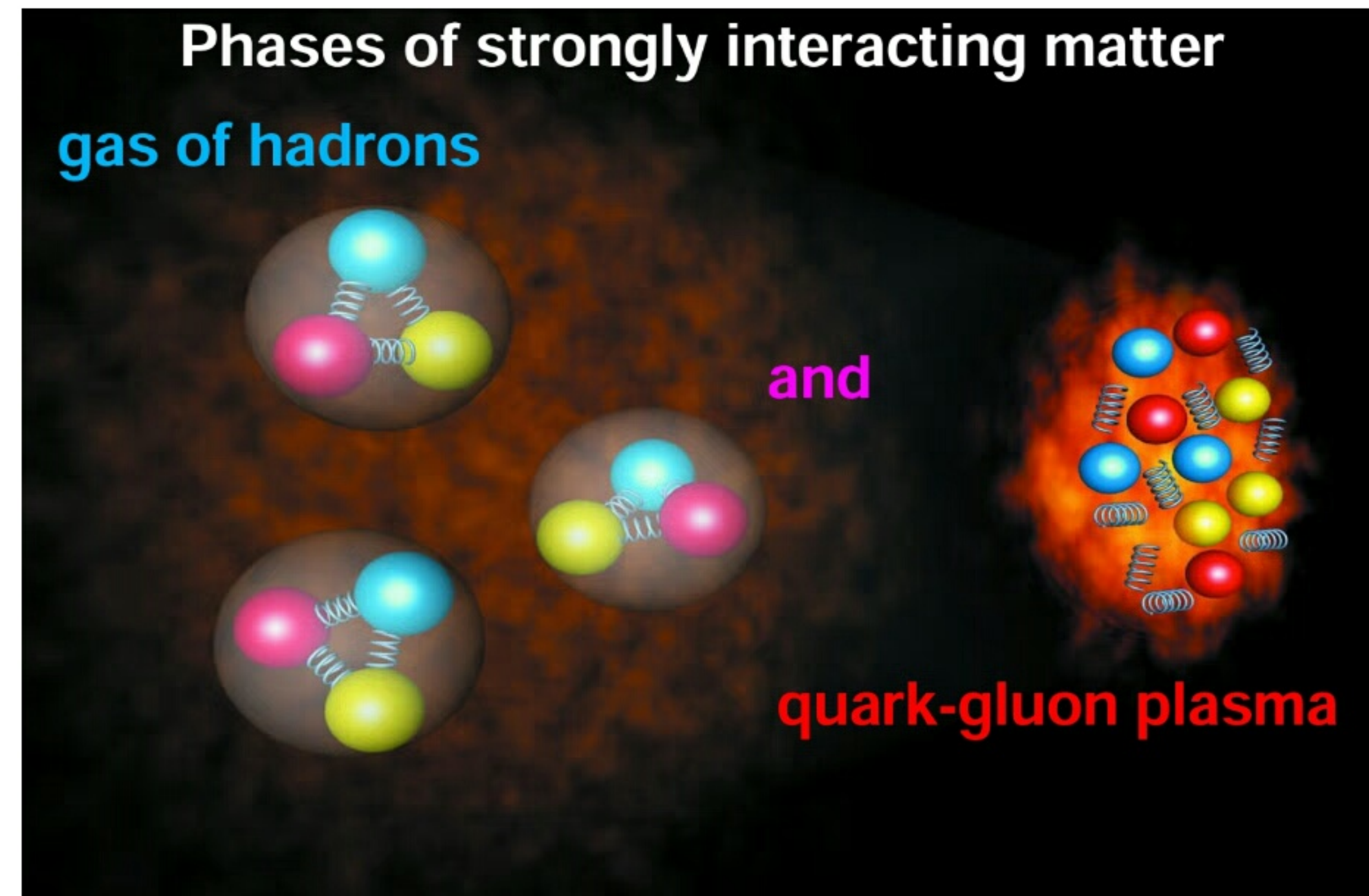


UNCOVERING CRITICAL STRUCTURES
IN STRONG INTERACTIONS AS
DOCTORAL AND POSTDOCTORAL RESEARCHER IN KIELCE

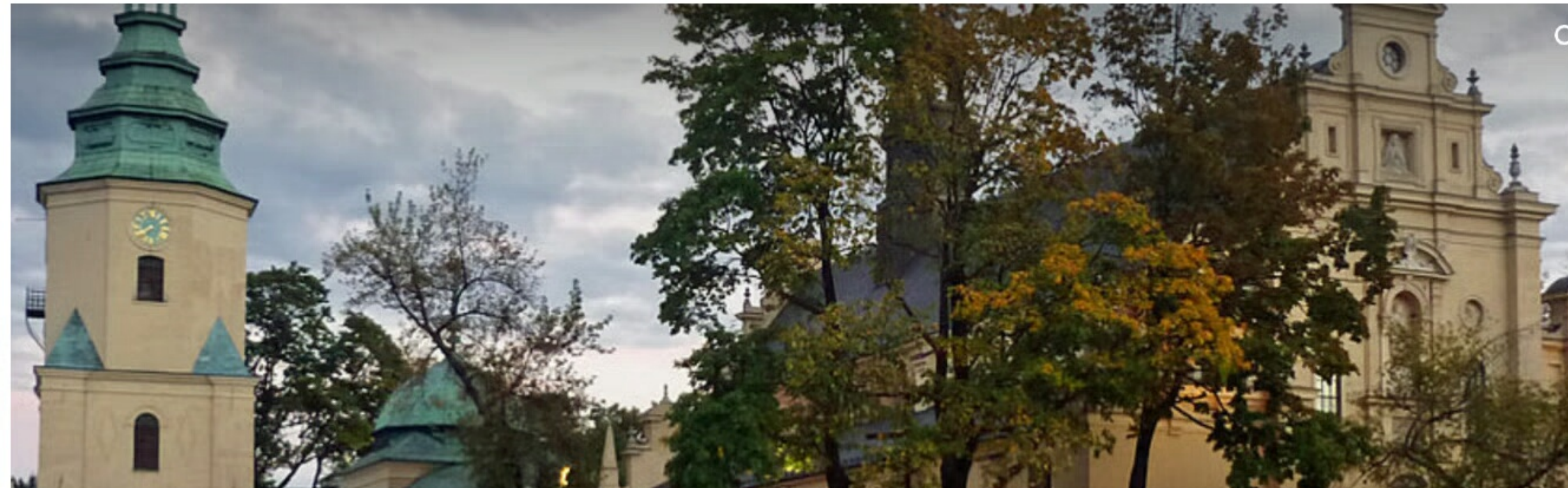


PROJECT LOCATION:

JAN KACHANOWSKI UNIVERSITY IN KIELCE, POLAND
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
THE NAGI/SHINE GROUP



KIELCE



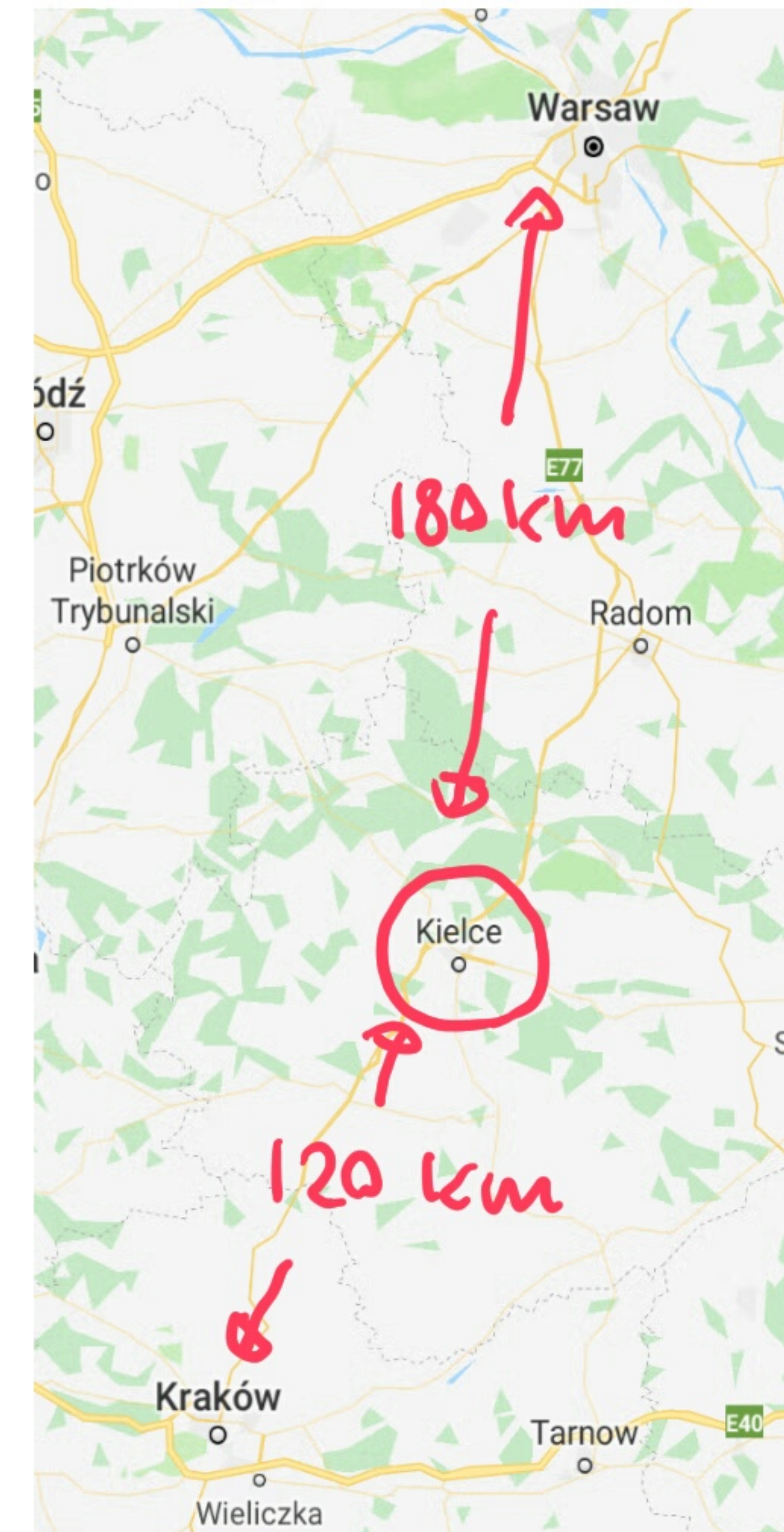
Kielce

Place in Świętokrzyskie, Poland

Kielce ([ˈkʲɛɫʦɛ] (listen)) is a city in south central [Poland](#) with 196,335 inhabitants.^[2] It has been the capital city of the [Świętokrzyskie Voivodeship](#) (Holy Cross Province) since 1999, and was previously the capital of the predecessor [Kielce Voivodeship](#) (1919–1939, 1945–1998). The city is located in the middle of the [Świętokrzyskie Mountains](#) (Holy Cross Mountains), on the banks of the Silnica River, in northern part of the historical Polish province of [Lesser Poland](#).

≈ 1000 YEARS OLD

≈ 200k PEOPLE



BY CAR:

- KRAKÓW: 120 km, 1:40
- WARSZAWA: 180 km, 2h

KIELCE FROM HOTEL KONGRESAWY
(100 m TO NAGI/SHINE IN KIELCE)



11 km FROM KIELCE



LESZCZYNY, SAINT JACEK'S CHURCH

13 km FROM KIELCE



ROYAL CASTLE CHĘCINY



CAVE RAJ

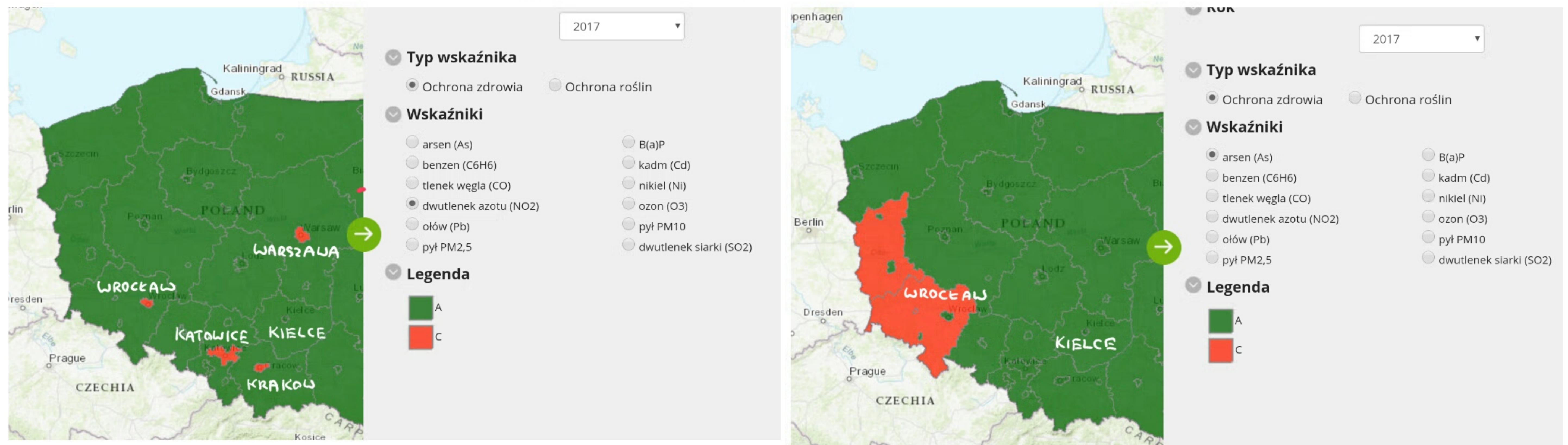
Przyroda / NATURE

W granicach administracyjnych Kielc znajduje się część Chęcińskiego-Kieleckiego Parku Krajobrazowego, Kielecki Obszar Chronionego Krajobrazu, a także 5 rezerwatów przyrody:

- Rezerwat przyrody Kadzielnia
- Rezerwat przyrody Biesak-Białogon
- Rezerwat przyrody Karczówka
- Rezerwat przyrody Ślichowice im. Jana Czarnockiego
- Rezerwat przyrody Wietrznia im. Zbigniewa Rubinowskiego

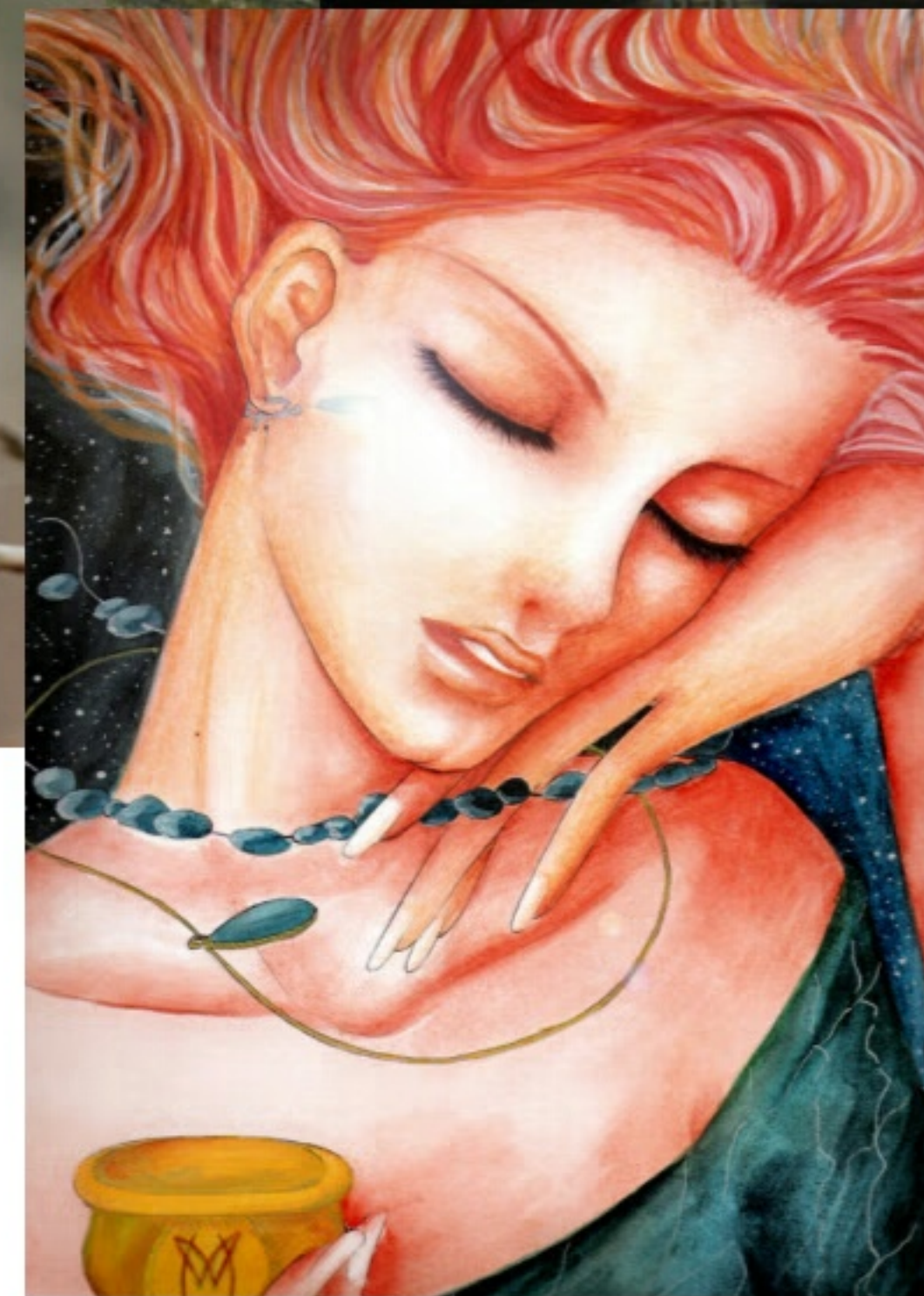
FIVE
NATURE RESERVES
IN KIELCE

POLLUTION IN POLAND



WITCHES' SABBATH IN LYSA GÓRA

30 KM FROM KIELCE



JAN KOCHANOWSKI UNIVERSITY IN KIELCE



The Jan Kochanowski University (JKU) in Kielce is the only university of Świętokrzyskie region, and one of Poland's twenty universities. It provides workplaces for 1,637 employees, including 909 university teachers, out of whom 243 hold academic titles of professors or degrees of doctors habilitated, and 442 hold doctoral degrees. The University has the rights to confer doctoral degrees in eleven disciplines, and degrees of doctor habilitated in two disciplines. It has 16,310 undergraduates, 155 doctoral students, and 666 postgraduates. The JKU offers 9 doctoral programmes

as well as education in 34 fields of study at first- and second-cycle level, with almost as many as 150 specialties in a variety of disciplines in the humanities, social science, arts, medical science, natural sciences and exact sciences. The University comprises 7 Faculties: Humanities, Mathematics and Natural Sciences, Faculty of Medicine and Health Sciences, Education and Arts, Management and Administration, as well as Faculties of Language Studies and History, and Social Science at the University's Branch in Piotrków Trybunalski.

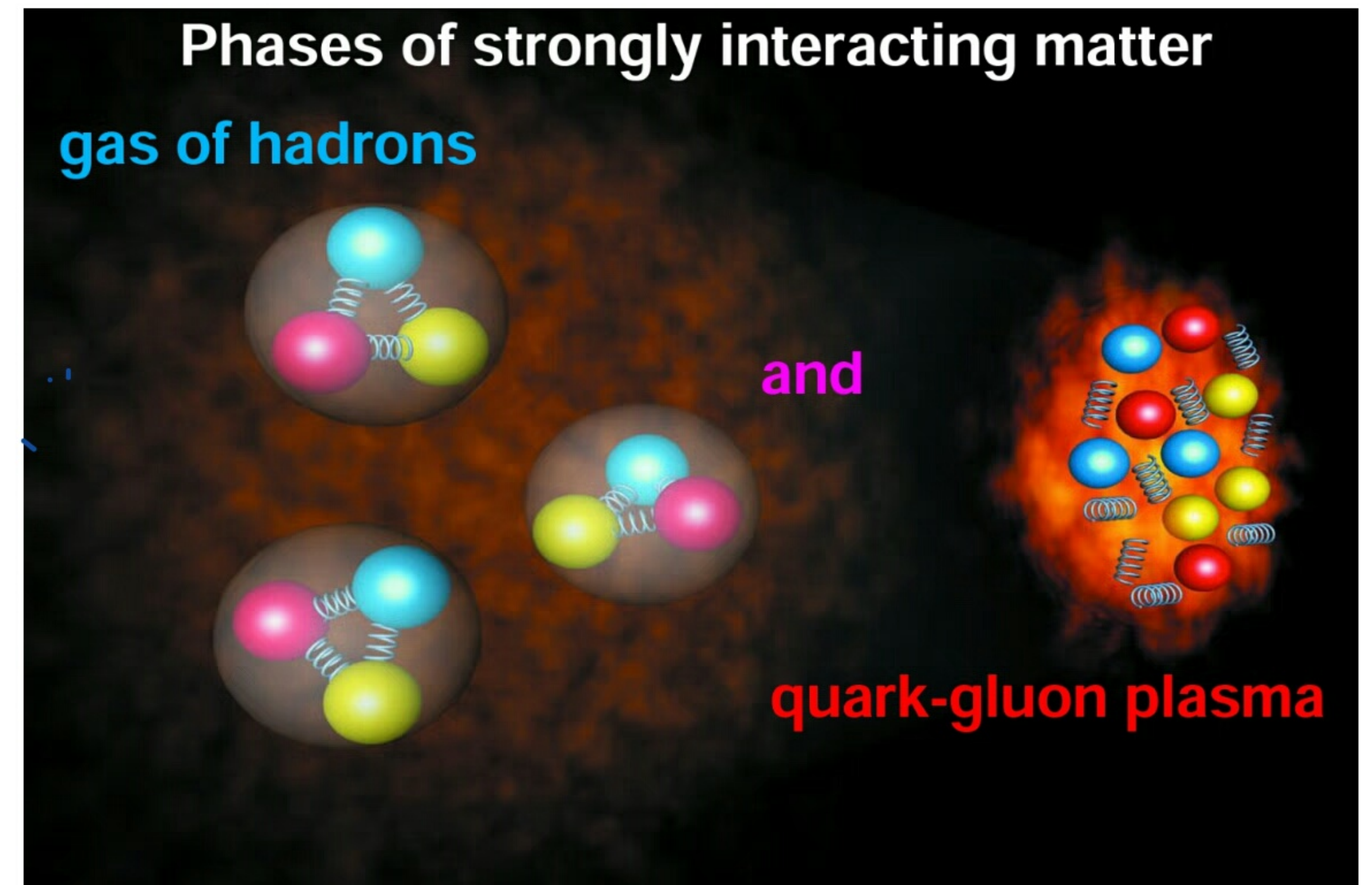
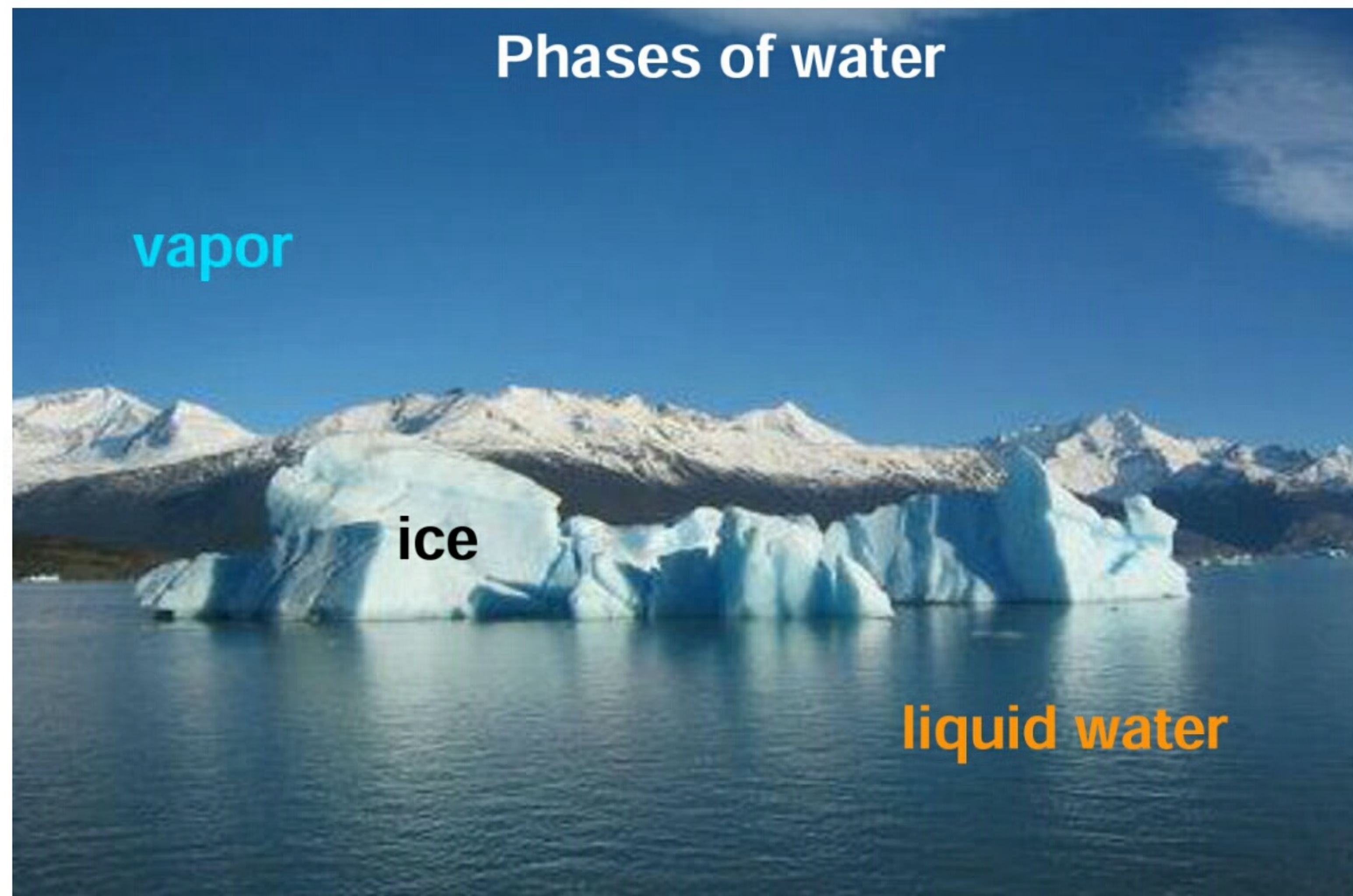
FACULTY OF MATHEMATICS AND NATURAL SCIENCES



PHYSICS OF DOCTORAL STUDIES

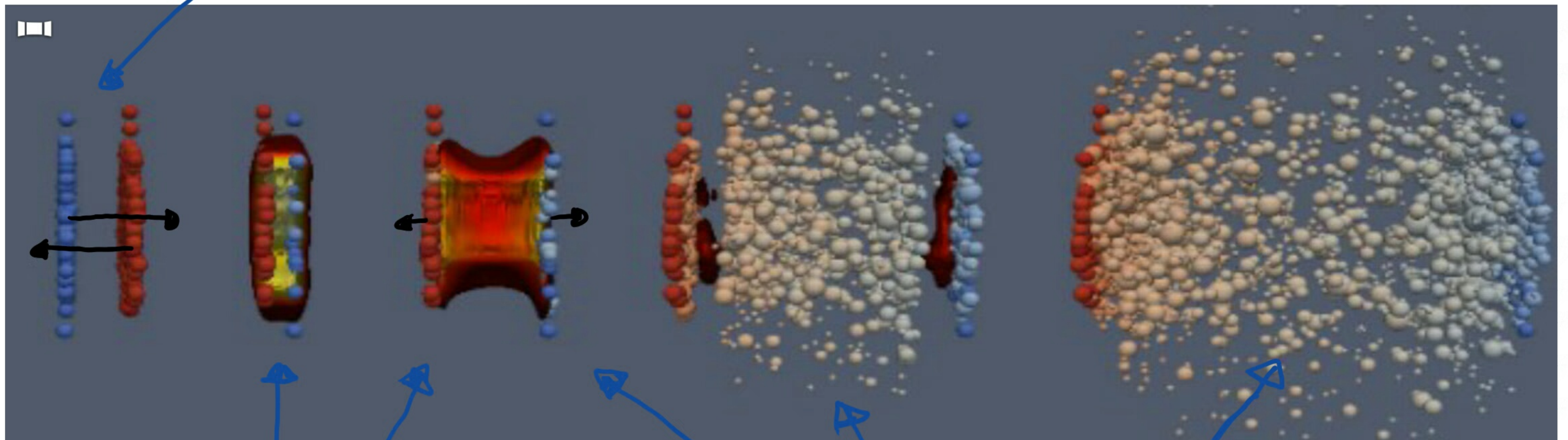
RESEARCH OBJECTIVE

WHAT ARE PHASES AND TRANSITIONS (\rightarrow CRITICAL STRUCTURES)
IN STRONGLY INTERACTING MATTER?



EXPERIMENTAL PROCEDURE

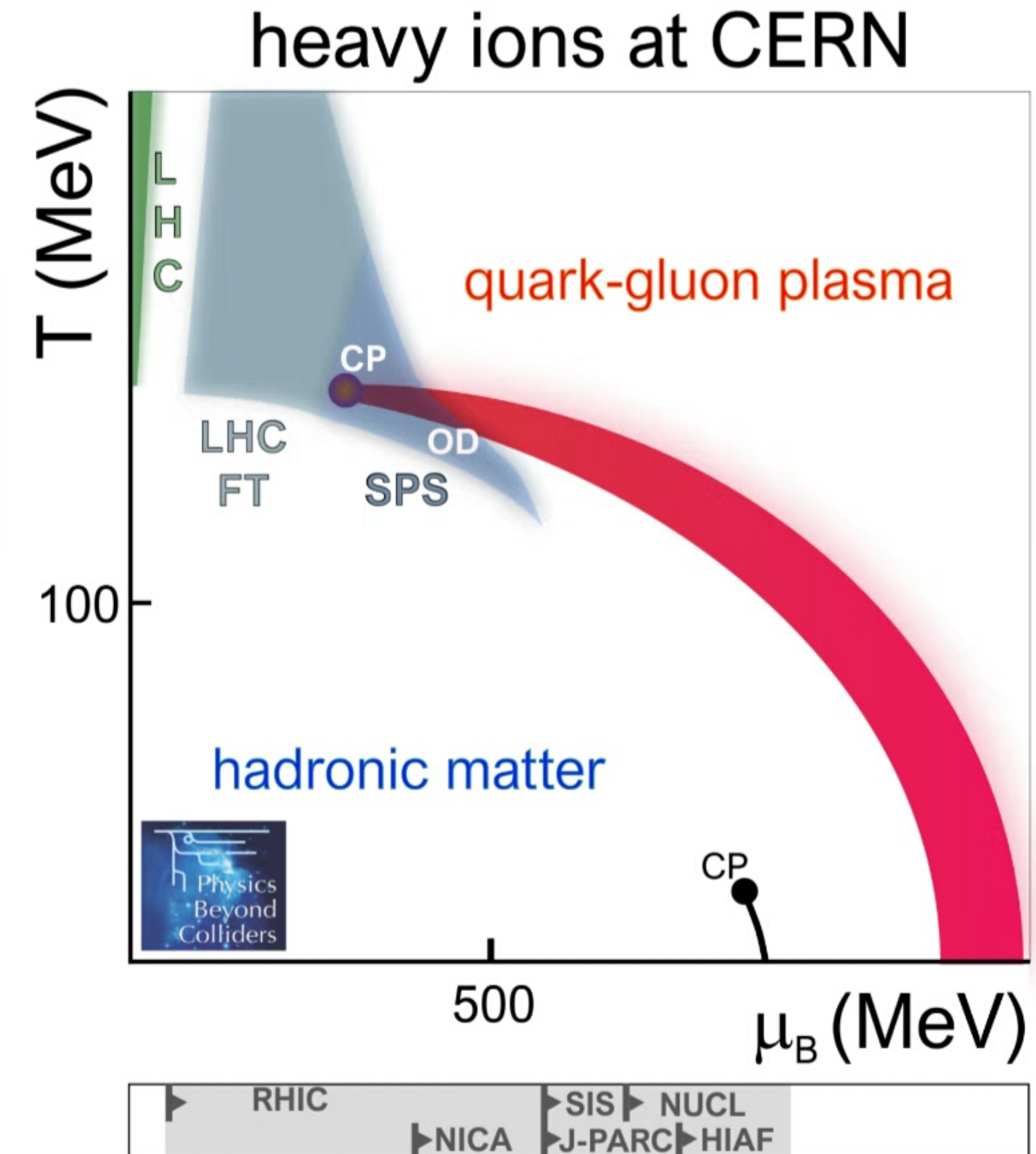
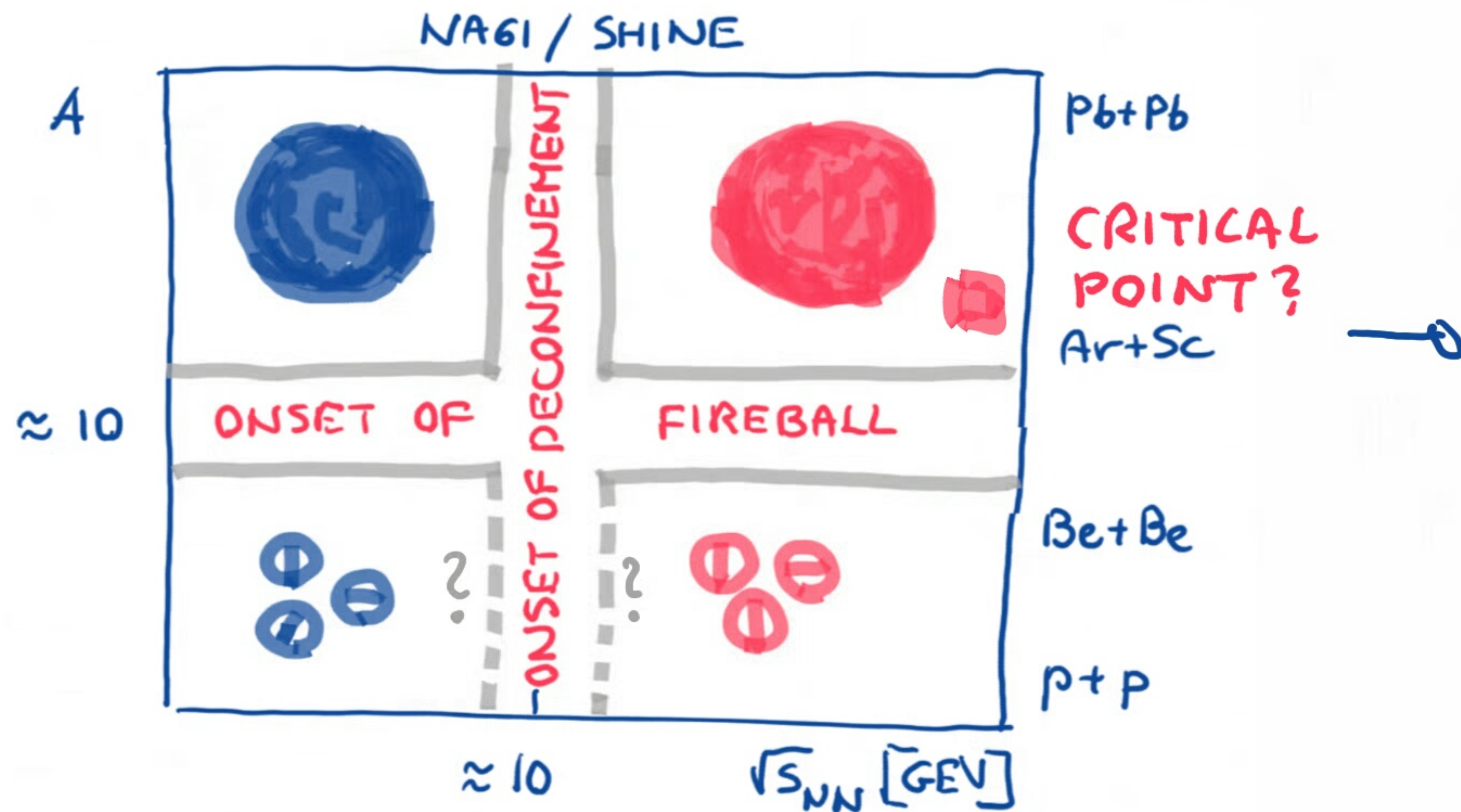
ATOMIC NUCLEI, DROPLETS OF STRONGLY INTERACTING MATTER, ARE ACCELERATED ALMOST TO LIGHT VELOCITY AND COLLIDED



HIGH ENERGY DENSITY
STRONGLY INTERACTING
MATTER IS CREATED

IT EXPANDS AND DECAYS INTO HADRONS
WHICH ARE MEASURED IN
PARTICLE DETECTORS

UNCOVERING CRITICAL STRUCTURES IN NUCLEAR COLLISIONS AT HIGH ENERGIES



CRITICAL STRUCTURES:

- ONSET OF DECONFINEMENT
- ONSET OF FIREBALL
- CRITICAL POINT

THE PROJECT GOALS

CRITICAL STRUCTURES AND PROTONS:

DEDICATED ANALYSIS OF PROTON PRODUCTION
IN NUCLEAR COLLISIONS

→ EXPLICIT DISCOVERY POTENTIAL

→ UNIQUE EXPERIMENTAL RESULTS

DISCOVERY POTENTIAL: CONVERTING INDICATIONS FOR
CRITICAL POINT AND ONSET OF FIREBALL INTO EVIDENCE
OF THE TWO PHENOMENA

UNIQUE RESULTS: PIONEERING RESULTS ON PROTON
PRODUCTION PROPERTIES AS A FUNCTION OF
COLLISION ENERGY AND NUCLEAR MASS NUMBER
OF COLLIDING NUCLEI

RESEARCH TASKS: MEASUREMENTS OF PROTON PRODUCTION PROPERTIES IN NUCLEUS-NUCLEUS COLLISIONS AT THE CERN SPS

- DATA PROCESSING/CALIBRATION/SELECTION
[ALL]

DATA ANALYSIS AND PUBLICATION OF RESULTS ON:

- PROTON SPECTRA (Ar+Sc, Xe+La, Pb+Pb)
[1 PD + 1 PHD]
- PROTON FLUCTUATIONS (P+P, Be+Be, Xe+La, Pb+Pb)
[1/2 PD + 1 PHD]
- PROTON CORRELATIONS/INTERMITTENCY (Be+Be, Ar+Sc, Xe+La, Pb+Pb)
[1/2 PD + 1 PHD]

[THE GROUP: PHYSICIST, 2x POST. DOCS
3 PHD STUDENTS, MG]

RESEARCHERS ARE EXPECTED TO :

- TAKE HARDWARE AND DATA TAKING SHIFTS AT CERN (ABOUT ONE WEEK PER YEAR)
- PARTICIPATE IN NABI/SHINE MEETINGS (ABOUT TWO ONE-WEEK LONG MEETINGS PER YEAR)
- PRESENT POSTERS AND TALKS AT CONFERENCES (ONE-TWO PER YEAR)
- ATTEND LECTURES FOR DOCTORAL RESEARCHERS (IN ENGLISH, ABOUT...)

THERE IS A POSSIBILITY TO APPLY FOR GRANTS FOR DOCTORAL AND POST-DOCTORAL RESEARCHERS TO COMPLEMENT THE STUDY.

PROJECT COORDINATION:

MAREK GAZDZICKI
NAGI/SHINE SPOKES PERSON

PROJECT START:

MID 2019

PROJECT DURATION:

ABOUT 4 YEARS

INCOME:

DOCTORAL RESEARCHER: UP TO 5500 PLN
(TAX-FREE SCHOLARSHIP)

POSTDOCTORAL RESEARCHER: UP TO 10000 PLN
(SUBJECT OF TAXATION → 6000-7000 PLN)

MINIMUM (ACCOMODATION IN STUDENT'S HOUSE ≈ 400 PLN) MONTHLY
STUDENT LIVING EXPENSES IN KIELCE ≈ 800 PLN

RENT FOR A STUDIO: 700-1500 PLN

APPLY FOR DOCTORAL AND PAST-DOCTORAL POSITIONS
IN KIELCE

TO UNCOVER CRITICAL STRUCTURES
IN STRONG INTERACTIONS

