CONCPET

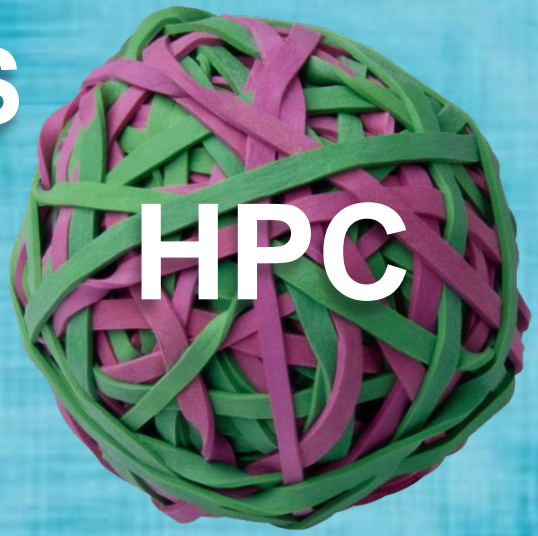
HIGH PERFORMANCE COMPUTING

TO USE COMPUTER CLUSTERS OR COLLECTION OF RESOURCES TO SOLVE ADVANCED PROBLEM THAT MAY TAKE TIME ON SINGLE

HPC IS ABOUT

RESOURCES

THINKING …



PEOPLE

CONCEPTS

TOOLS

TECHNIQUES

HPC APPLICATIONS

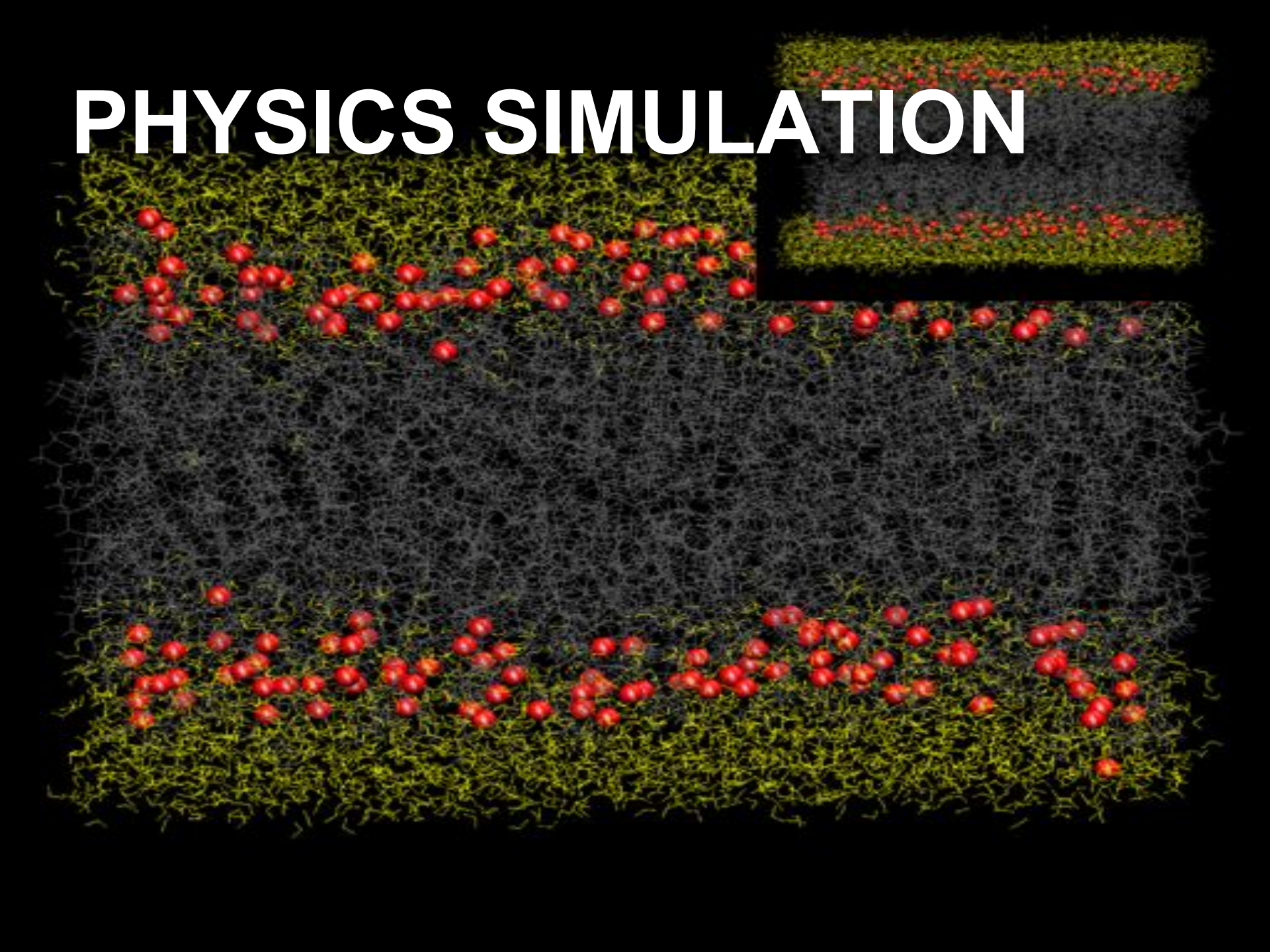
HPC APPLICATION VARIES IN DIFFERENT DOMAINS & ARENAS

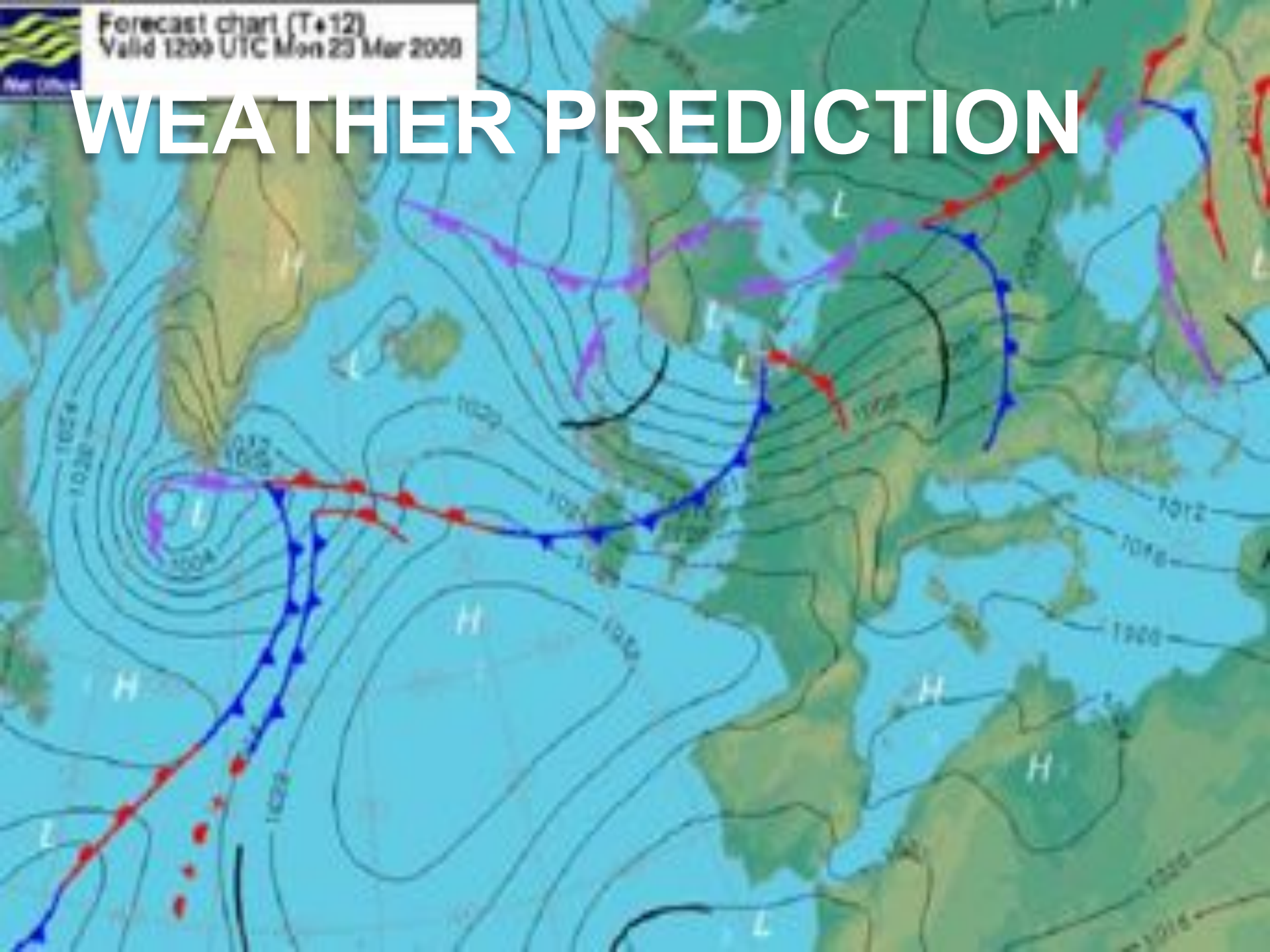
SCIENTIFIC

ACADEMIC

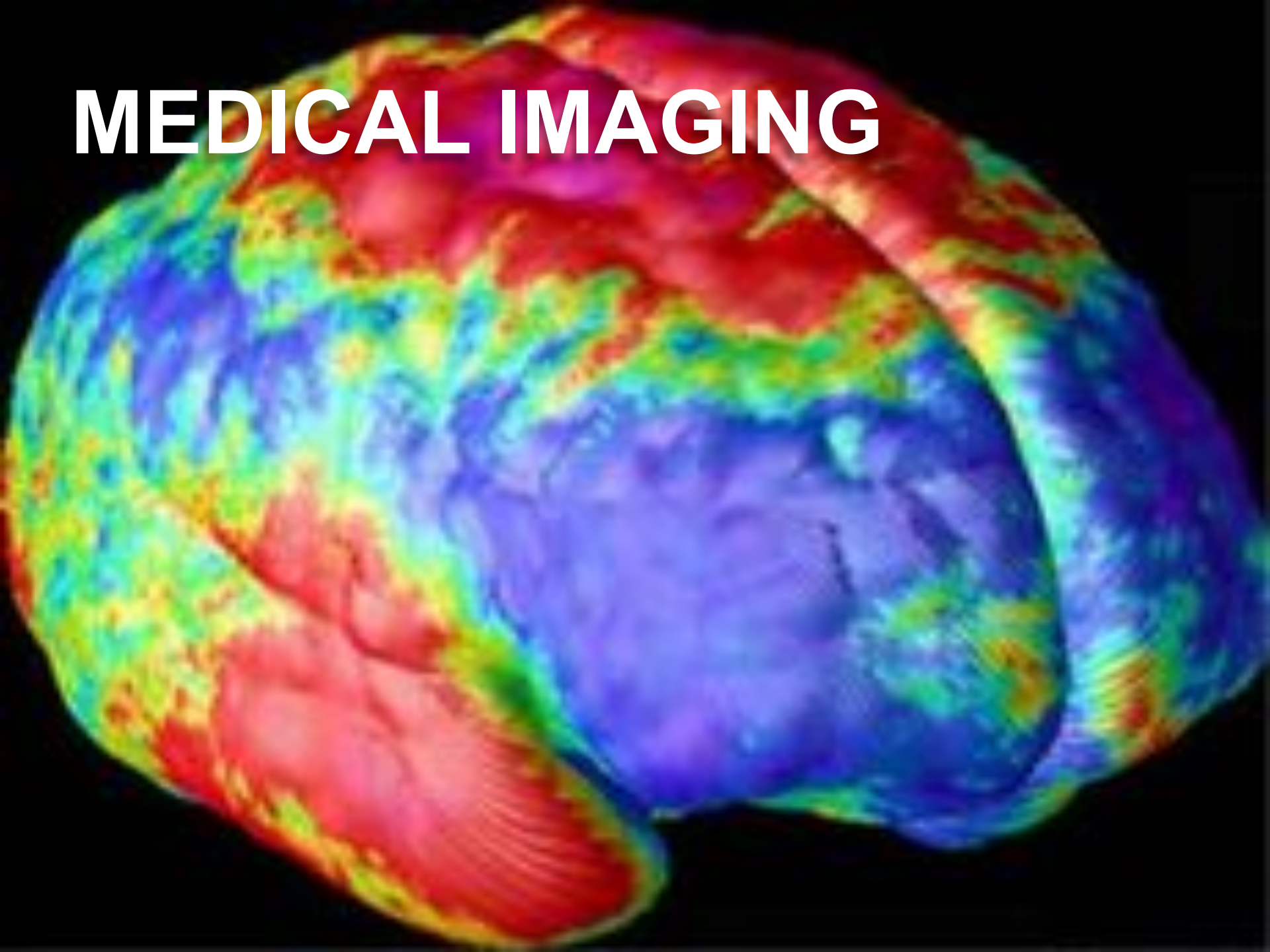
BUSINNESS

PHYSICS SIMULATION




Forecast chart (T+12)
Valid 1200 UTC Mon 23 Mar 2009
WEATHER PREDICTION

MEDICAL IMAGING



TO UNDERSTAND HPC
WE MUST FIND INTERFACE TO GET ITS

CONCEPTS
TERMINOLOGY
IDEAS
RELEVANTs

COMPUTER DESIGN

COMPUTER DESIGN

ALL COMPUTERS MORE OR LESS BASED ON SAME BASIC DESIGN

VON NEUMANN ARCHITECTURE

VON NEUMANN ARCHITECTURE

MODEL FOR DESIGNING AND BUILDING COMPUTERS

THREE CHARACTERISTICS

VON NEUMANN ARCHITECTURE

COMPUTER CONSISTS OF

FOUR MAIN

COMPONENTS

MEMORY

ALU

CONTROL UNIT

INPUT / OUTPUT

VON NEUMANN ARCHITECTURE

PROGRAM IS STORED

IN **MEMORY**

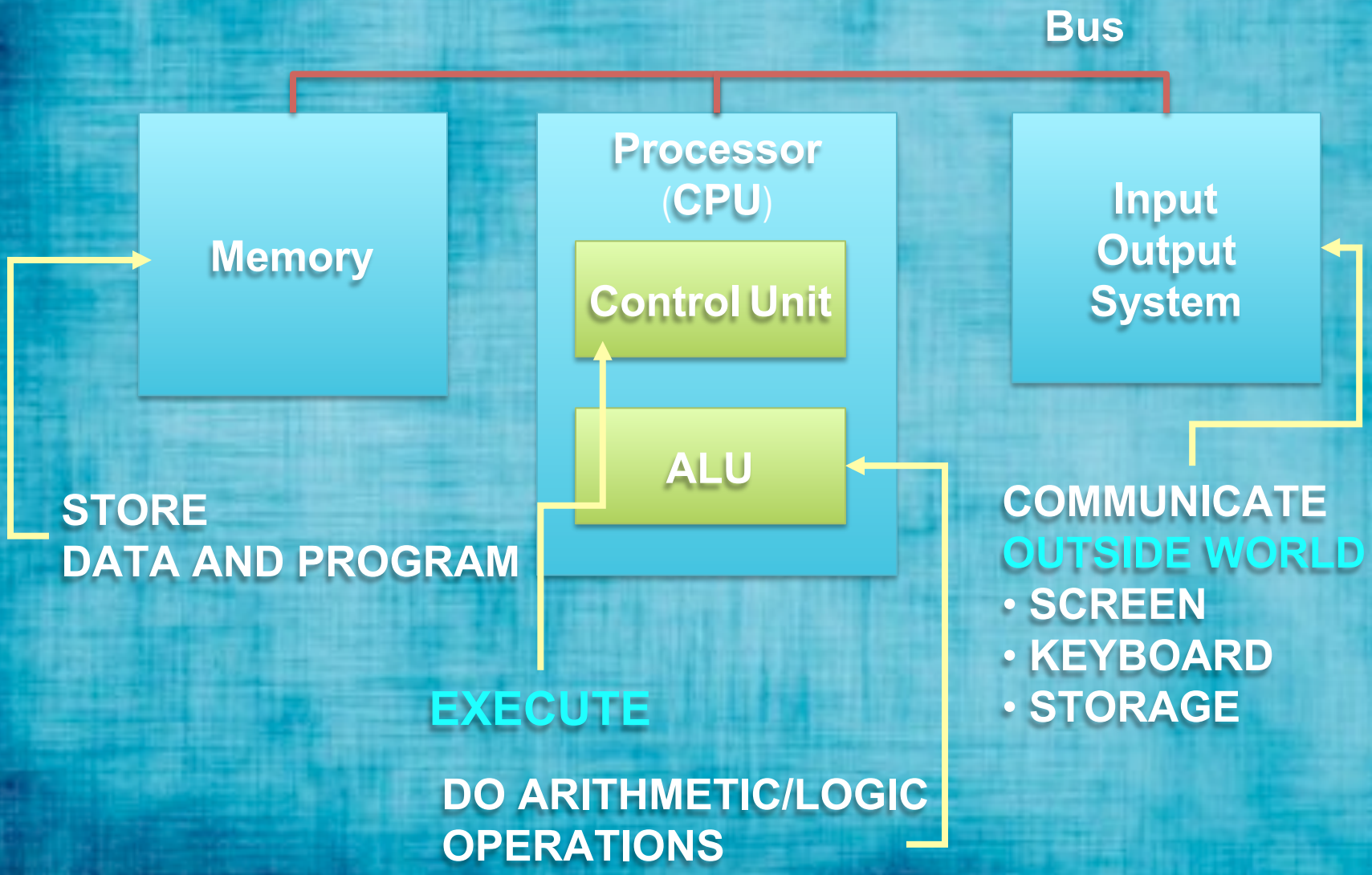
DURING EXECUTION

VON NEUMANN ARCHITECTURE

PROGRAM INSTRUCTIONS EXECUTED

SEQUENTIALLY

VON NEUMANN ARCHITECTURE



THEN

ANY PROBLEM FINALLY
TRANSLATED INTO SOME

INSTRUCTIONS

THE MORE YOU EXECUTE THEM

THE MORE YOU PERFORM