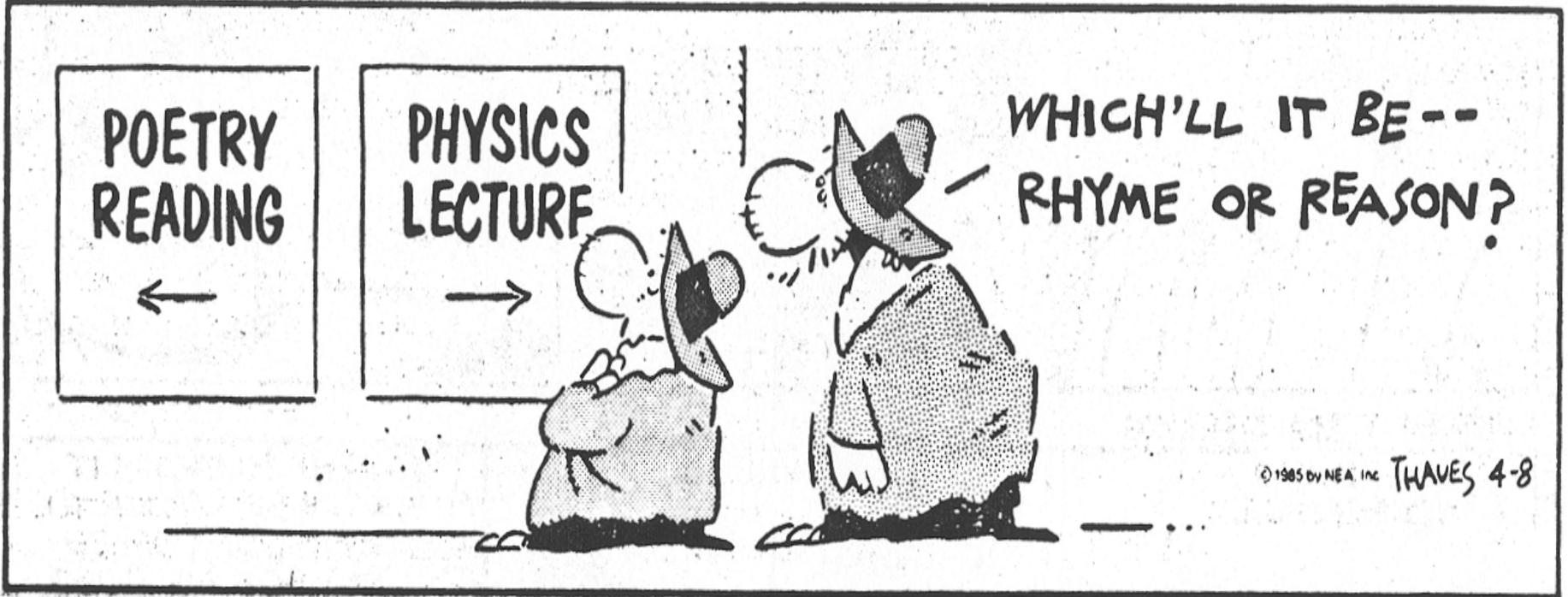




*Please be
seated.*

FRANK & ERNEST BOB THAVES



The Physics IQ Test

AAPT

New Professors Conference

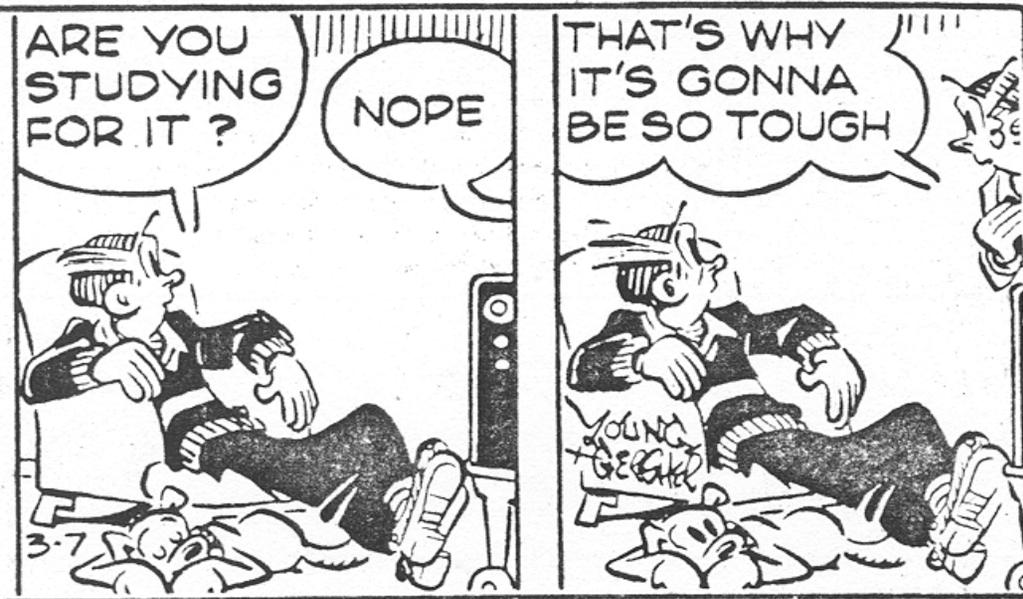
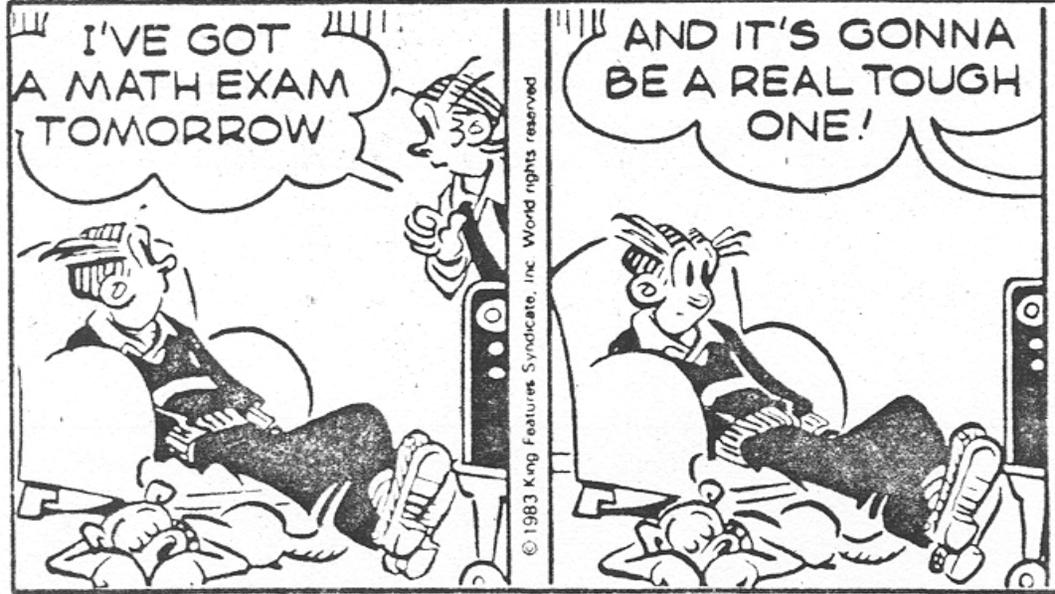
November 9, 2013

Prof. Richard E. Berg

Department of Physics

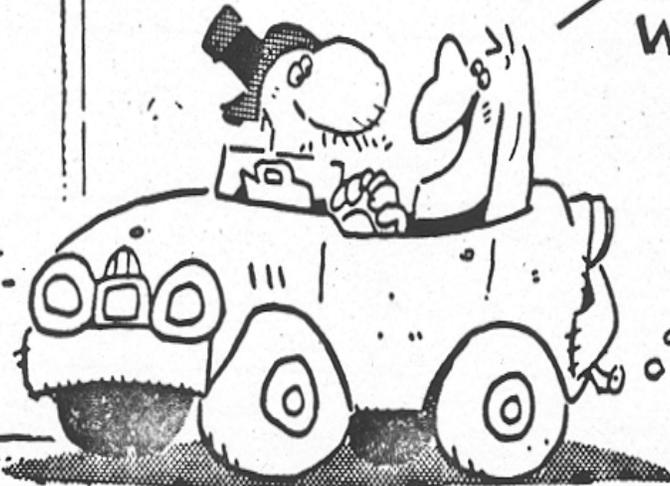
University of Maryland

BLONDIE YOUNG & GERSHER



FRANK & ERNEST BOB THAVES

DRIVING
TEST
AREA



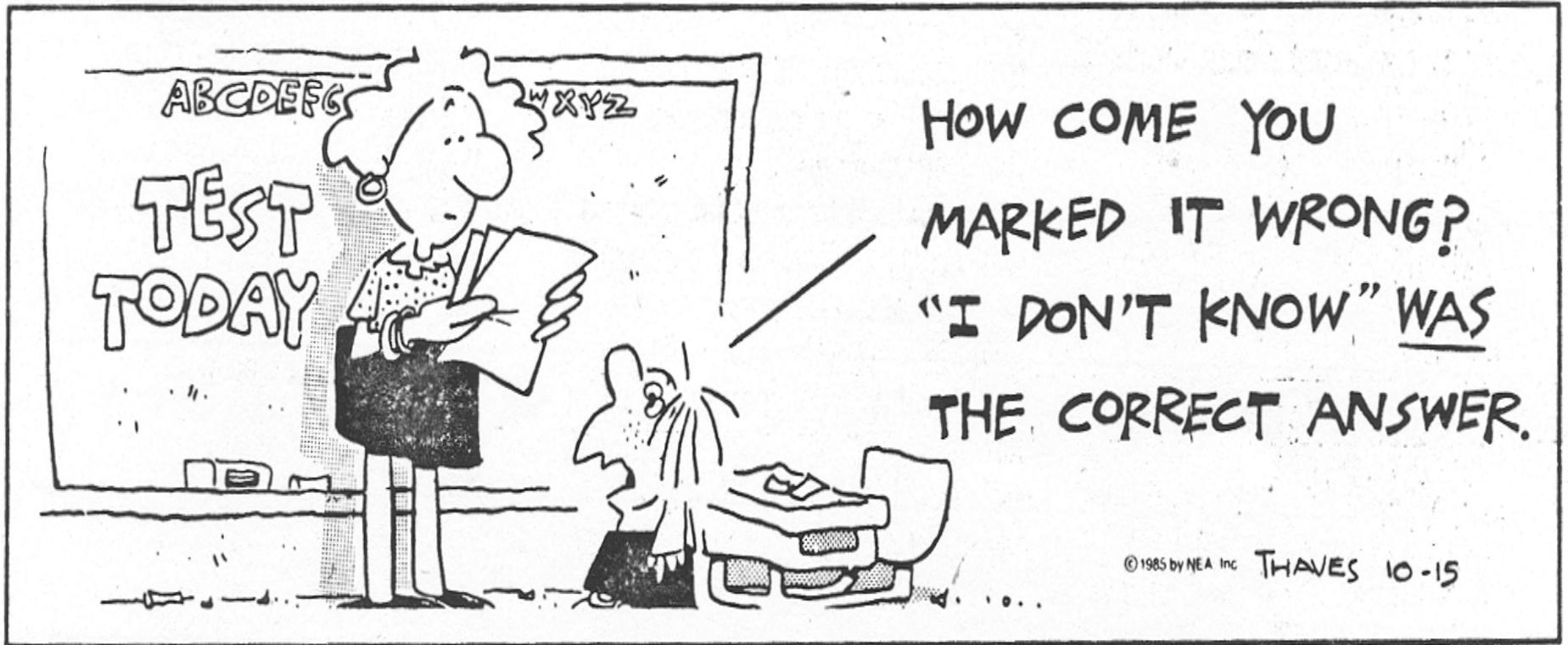
BEFORE WE START,
WHICH COUNTS MORE—
SPEED OR ACCURACY?

THAVES 11-15

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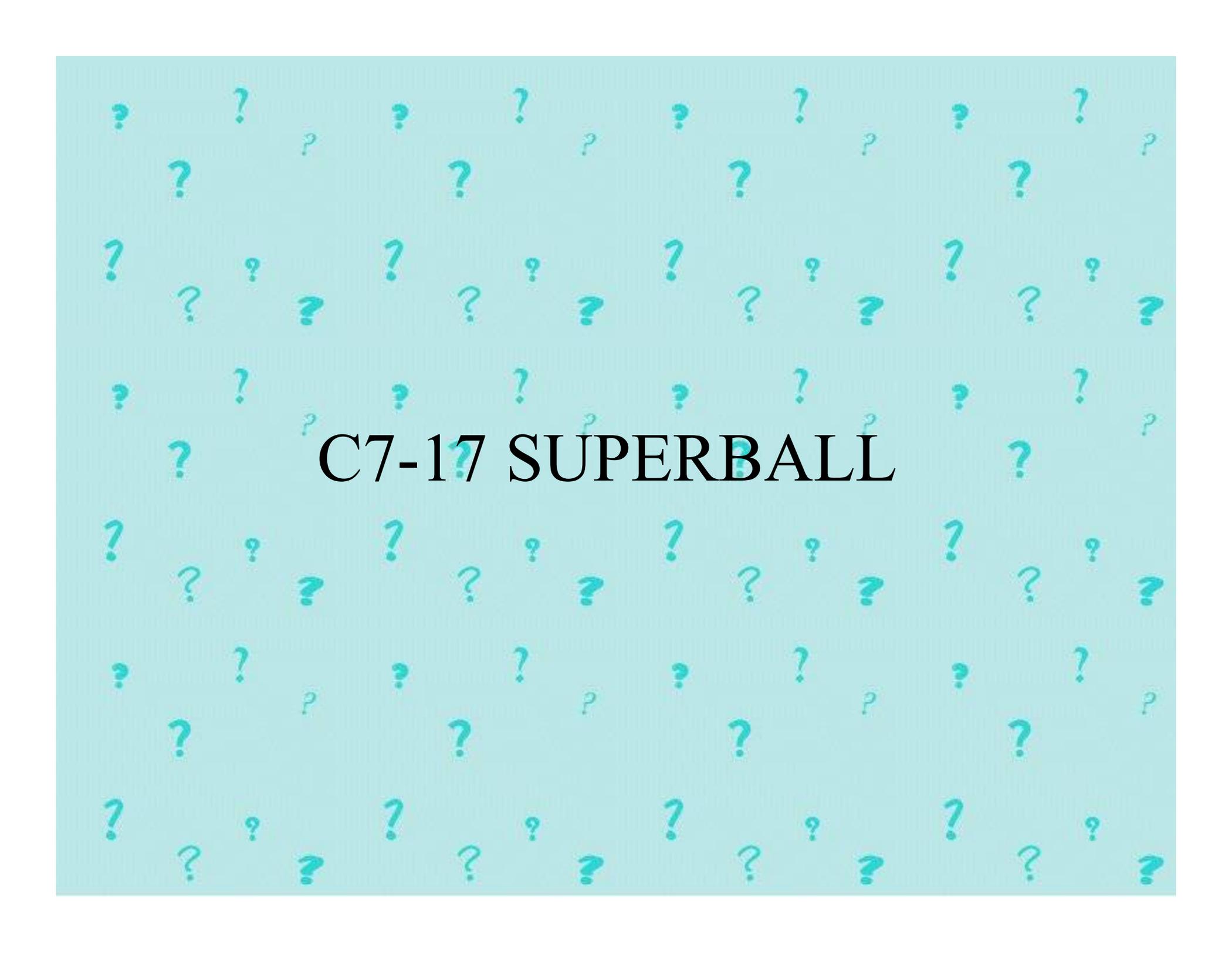


FRANK & ERNEST BOB THAVES

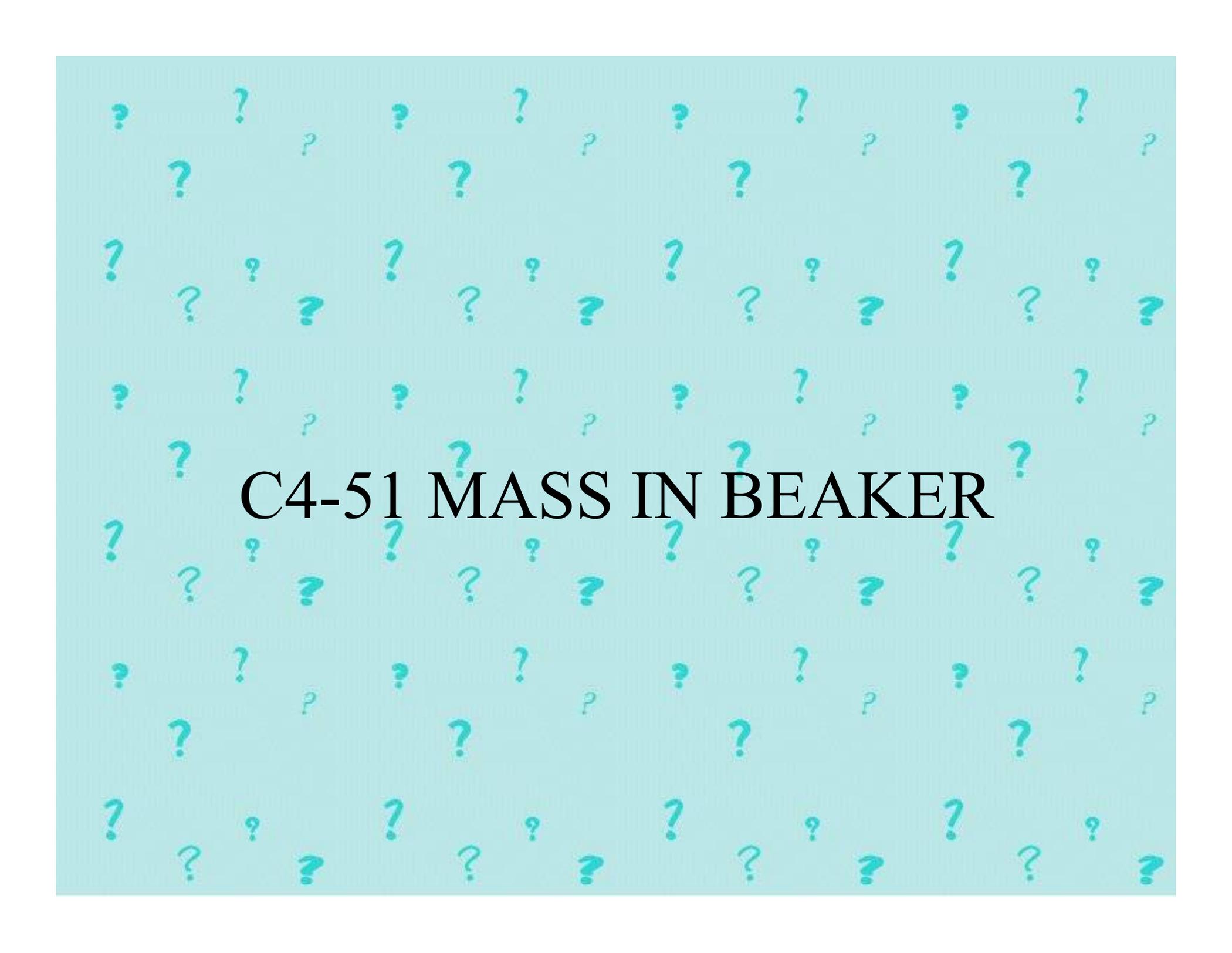


© 1985 by NEA Inc THAVES 10-15



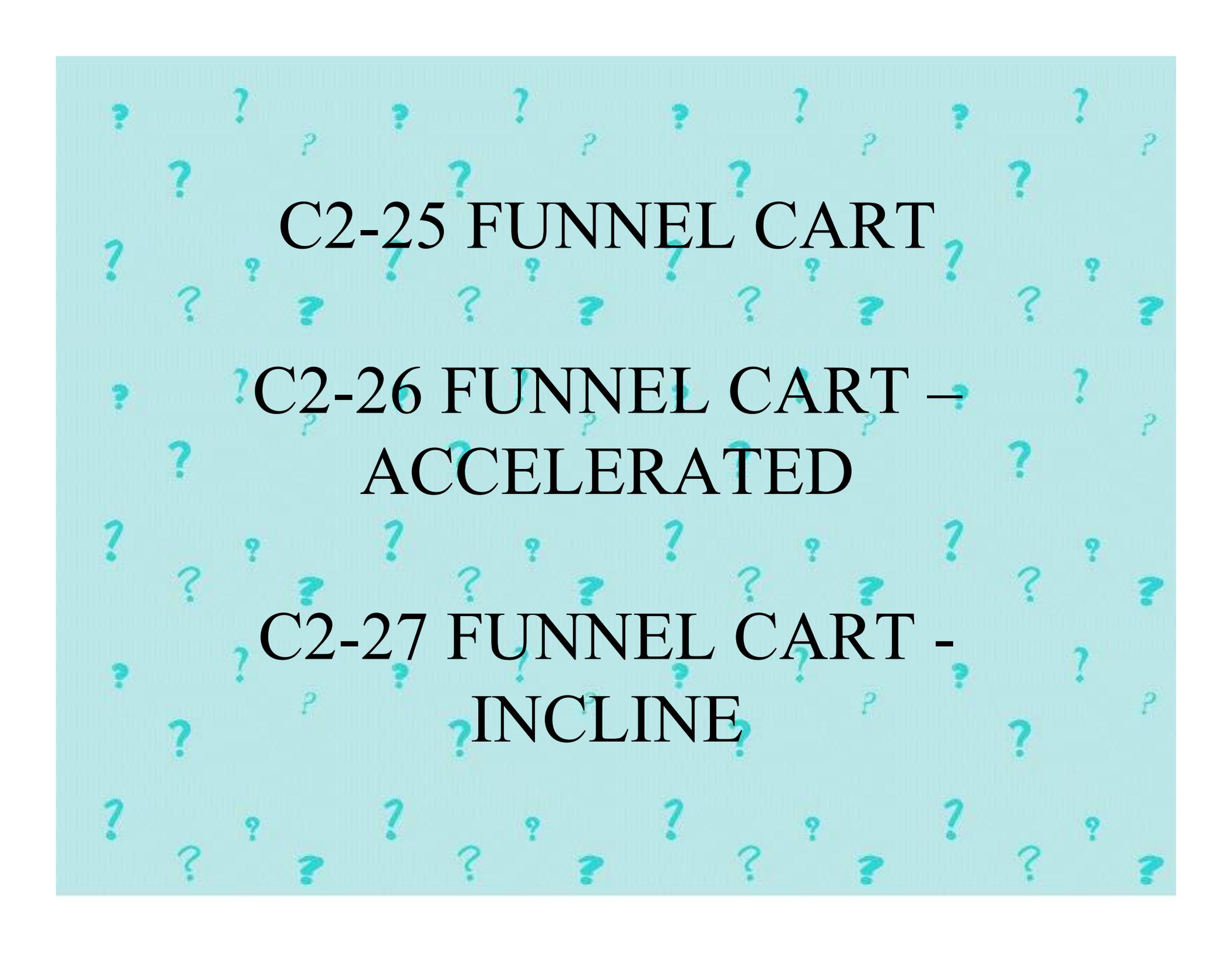
The background of the slide is a light blue color with a repeating pattern of question marks in a darker blue shade. The question marks are scattered across the entire area, creating a textured, grid-like appearance.

C7-17 SUPERBALL

The background of the slide is a light blue color with a repeating pattern of question marks in a darker blue shade. The question marks are scattered across the entire area, creating a textured, grid-like appearance.

C4-51 MASS IN BEAKER

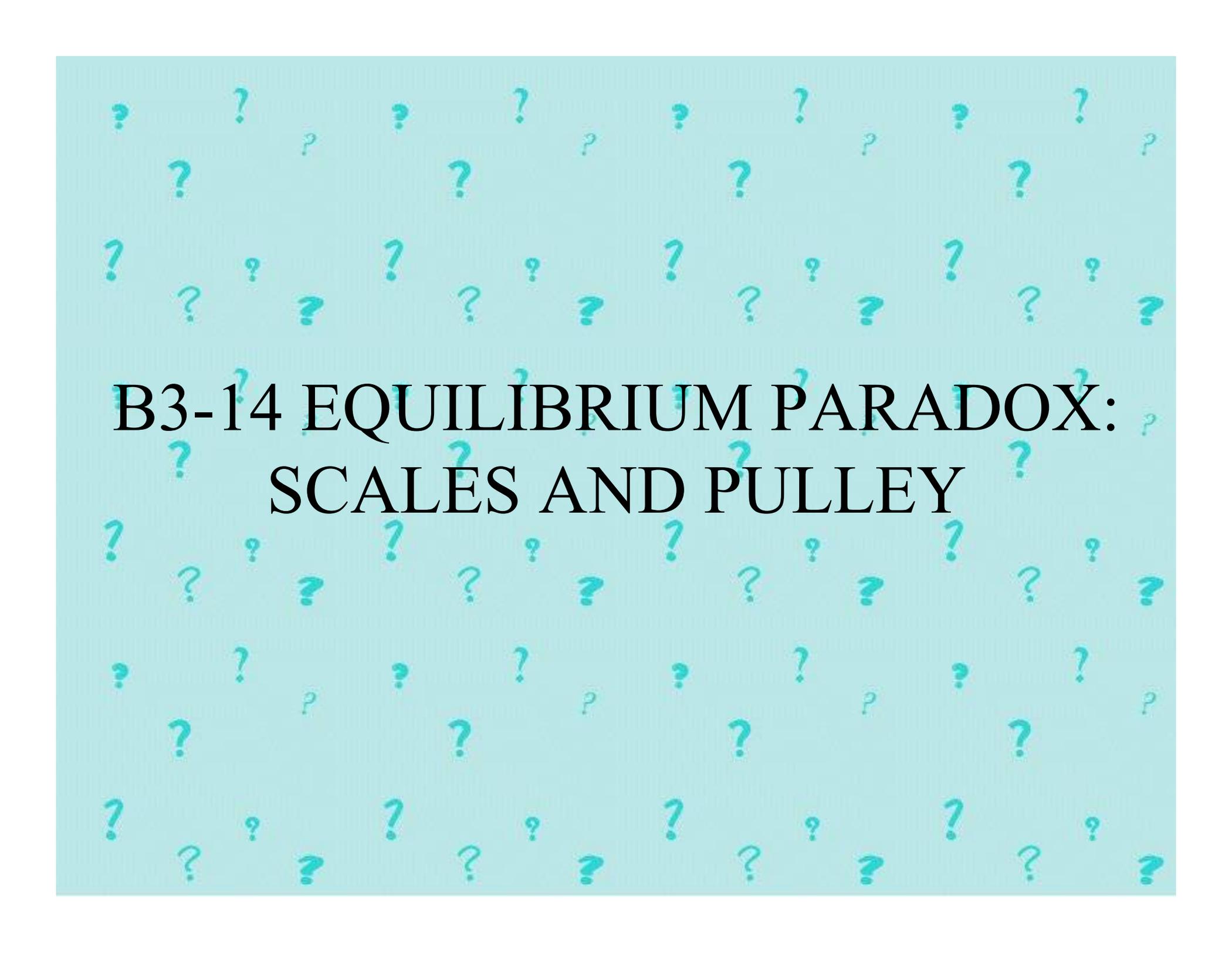
C4-62 DROPPED SLINKY

The background of the slide is a light blue color with a repeating pattern of small, dark blue question marks scattered across it.

C2-25 FUNNEL CART

C2-26 FUNNEL CART –
ACCELERATED

C2-27 FUNNEL CART -
INCLINE



B3-14 EQUILIBRIUM PARADOX: SCALES AND PULLEY

The background of the slide is a light blue color with a repeating pattern of question marks in a slightly darker shade of blue. The question marks are scattered across the entire page, creating a textured, interrogative background.

B4-04 SPRING AND STRING THING

Physicists and Modeling

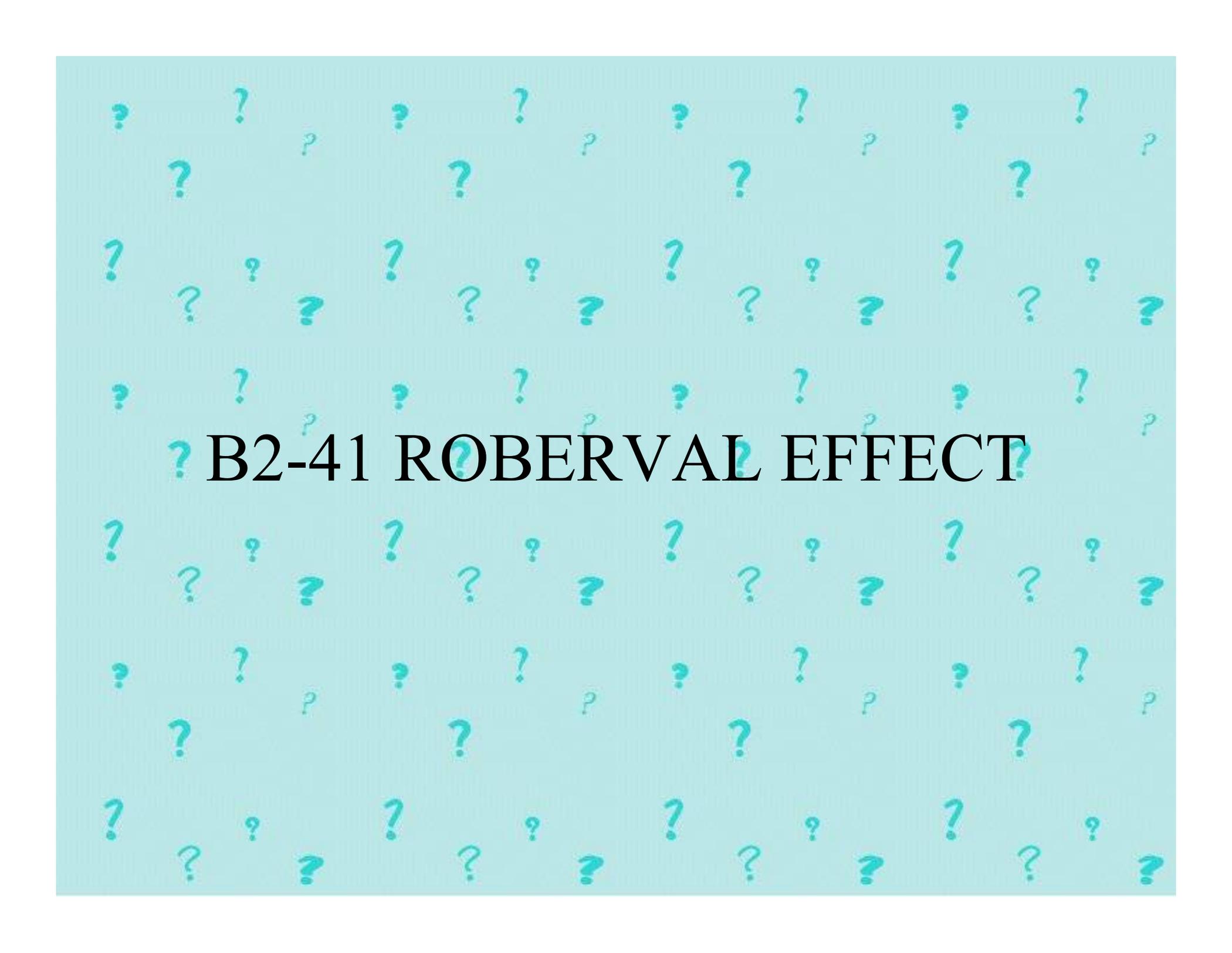
J. Doyne Farmer, Martin Shubik, and
Eric Smith:

Is Economics the Next
Physical Science;

Physics Today, September
2005

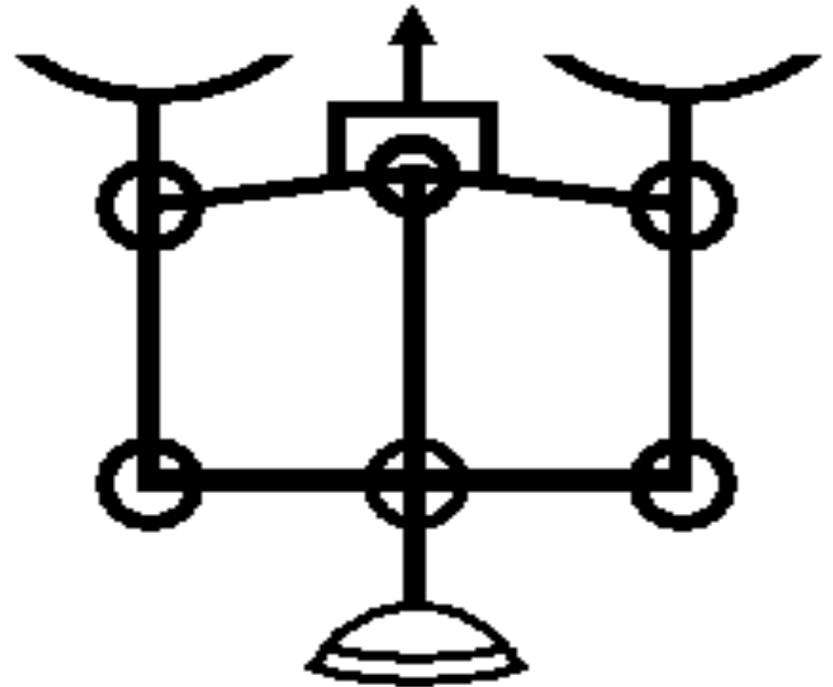
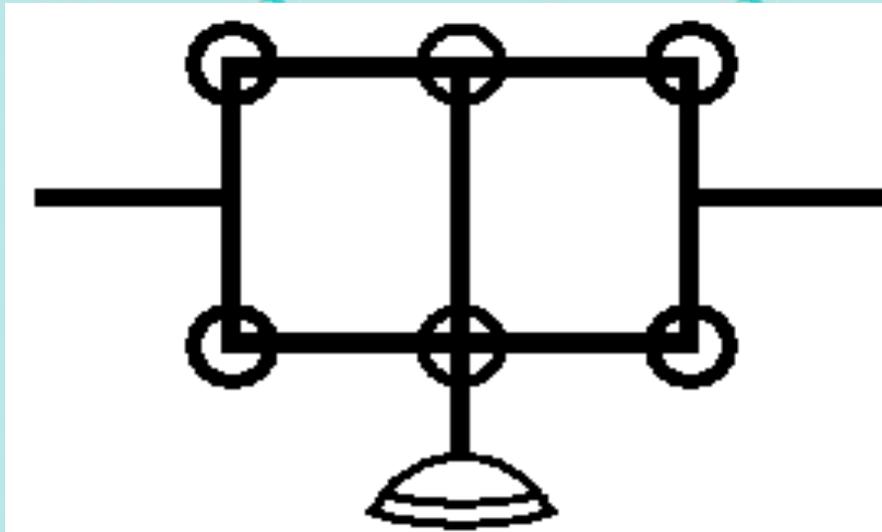
J. C. Maxwell:
On Governors

George Cooper:
The Origin of
Financial Crises

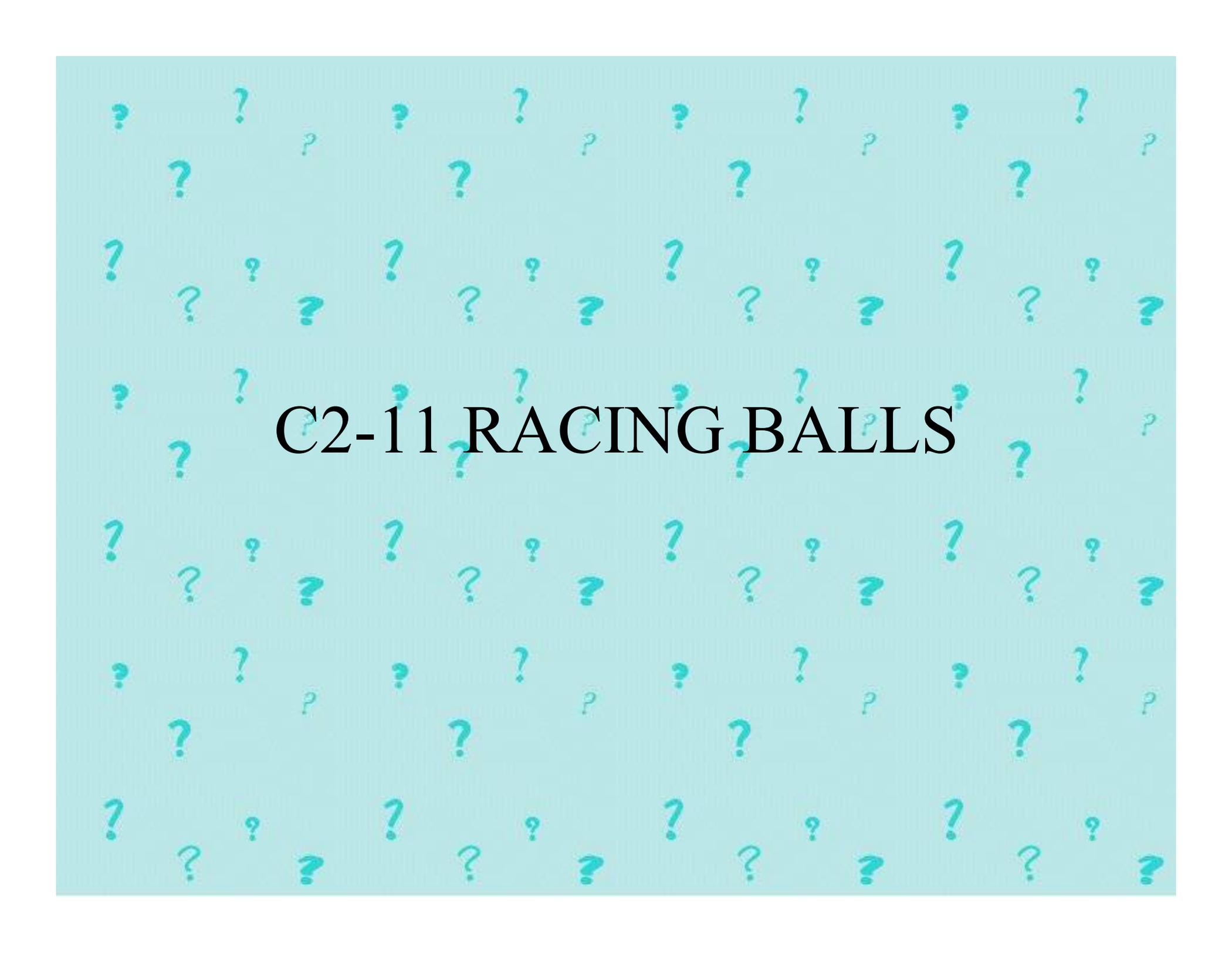
The background of the slide is a light blue color with a repeating pattern of question marks in a darker blue shade. The question marks are scattered across the entire page, creating a textured, interrogative background.

B2-41 ROBERVAL EFFECT

Roberval Balance and Pan Balance



F2-21 FINGER IN WATER

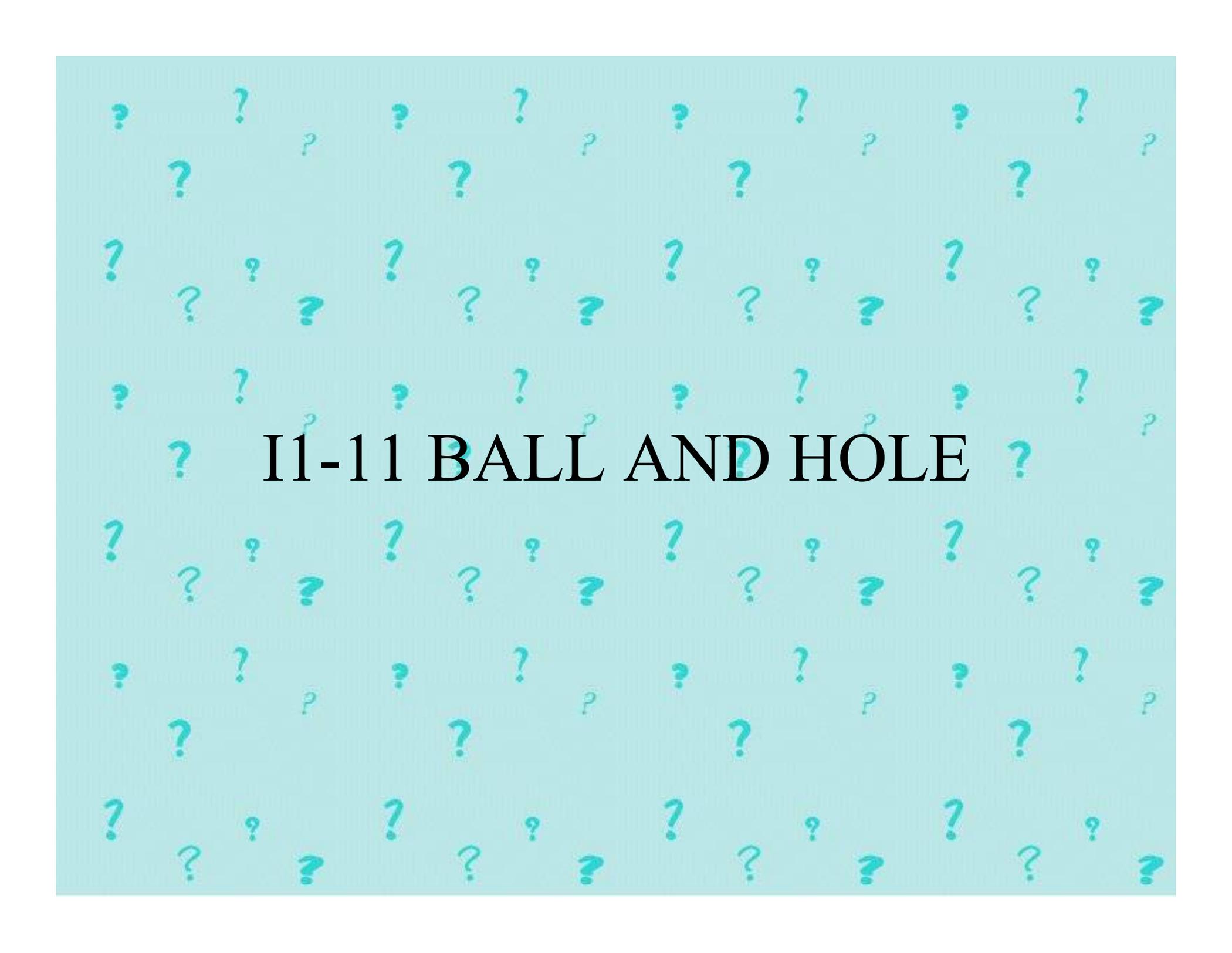
The background of the slide is a light blue color with a repeating pattern of question marks in a slightly darker shade of blue. The question marks are scattered across the entire page, creating a textured, grid-like appearance.

C2-11 RACING BALLS

Racing Balls:
Straight track
Dipped track
Tie



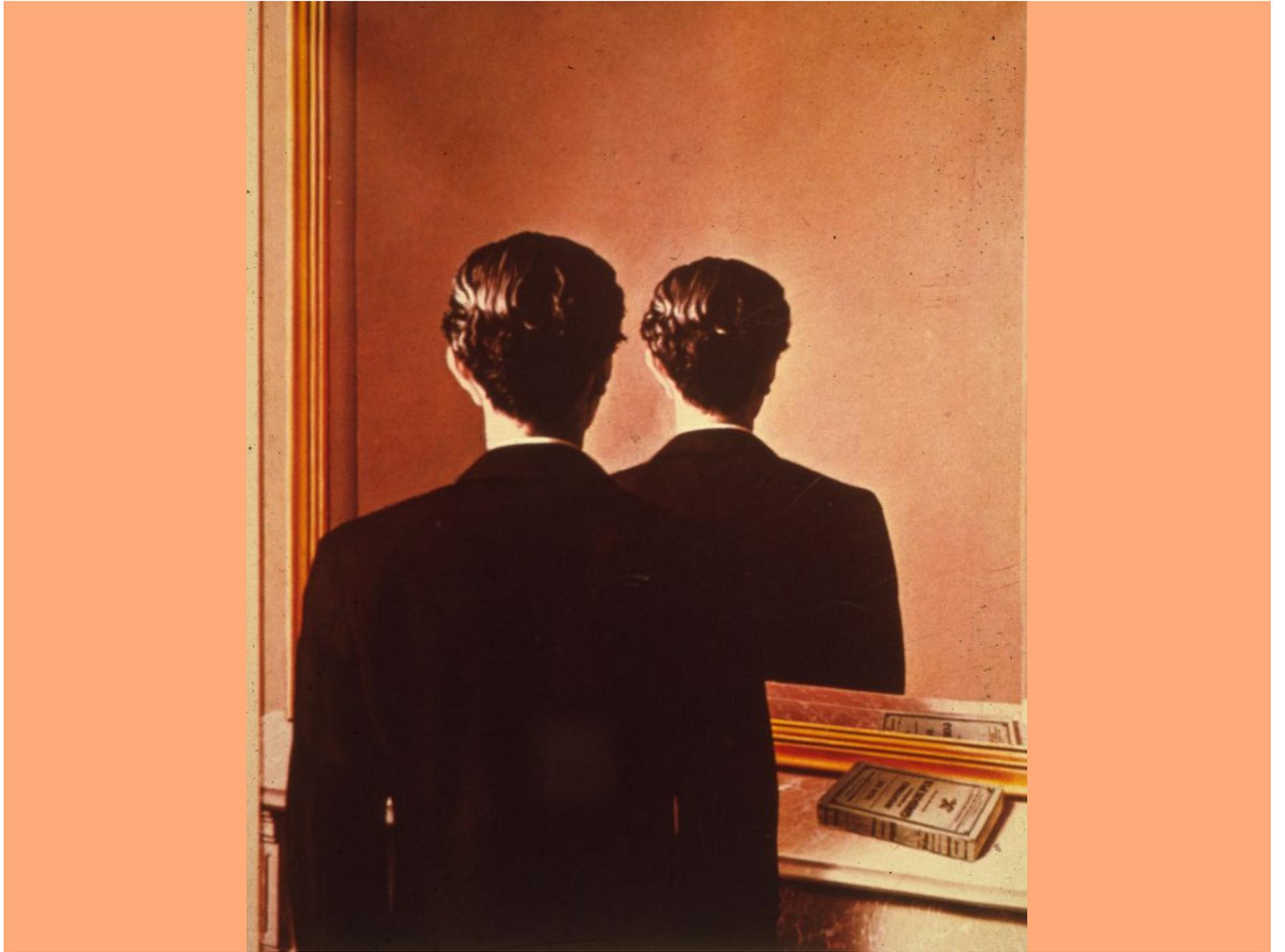
F3-02 BALLOONS

The background of the slide is a light blue color with a repeating pattern of question marks. The question marks are in a darker shade of blue and are scattered across the entire page, some appearing larger and more prominent than others.

I1-11 BALL AND HOLE

L2-05 IMAGE - PLANE MIRROR

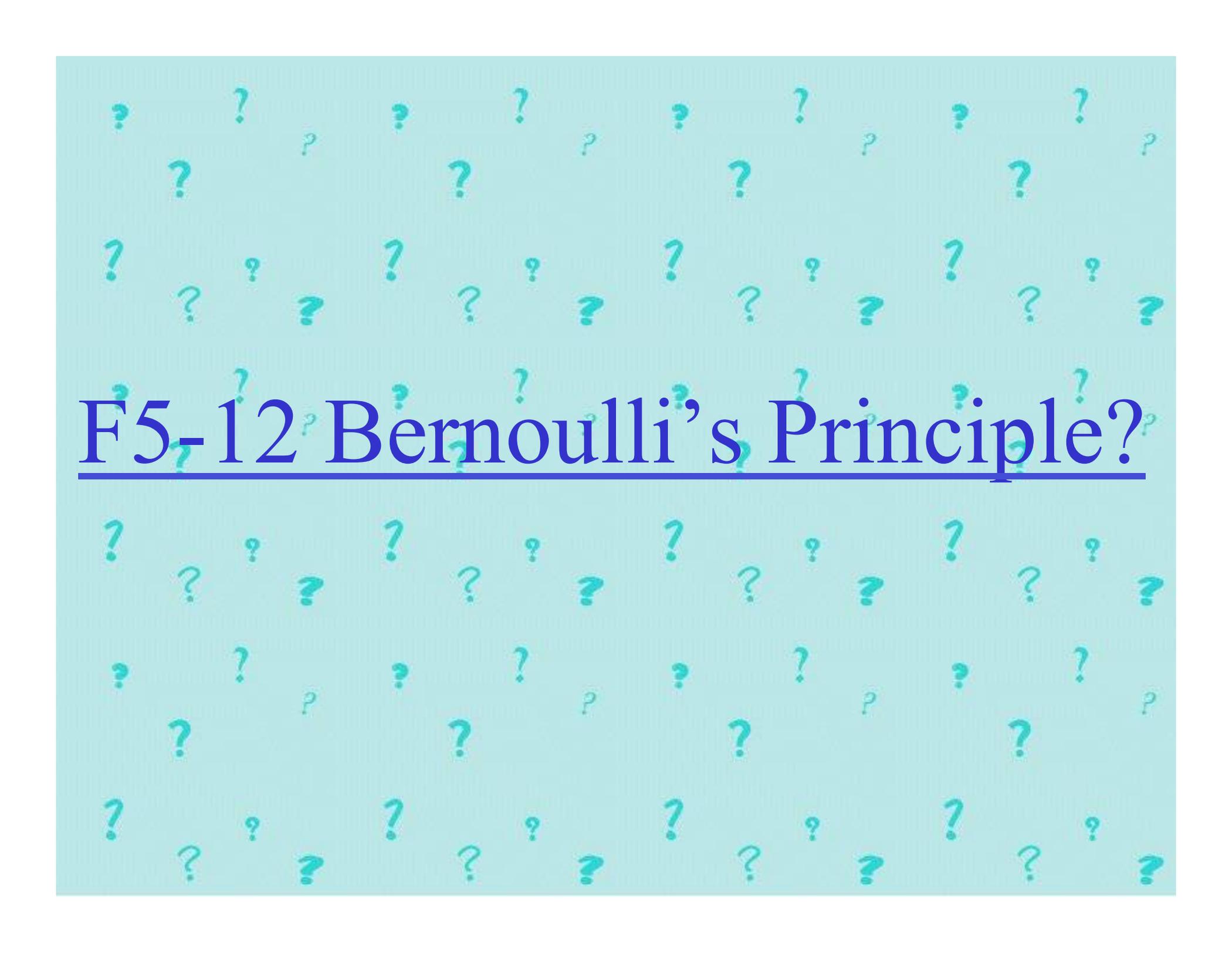
L2-07 IMAGE - LIGHT



Elementary Fluid Mechanics

F5-41: WIND BAG

Bernoulli effect
Coanda effect
Entrainment
Kutta condition

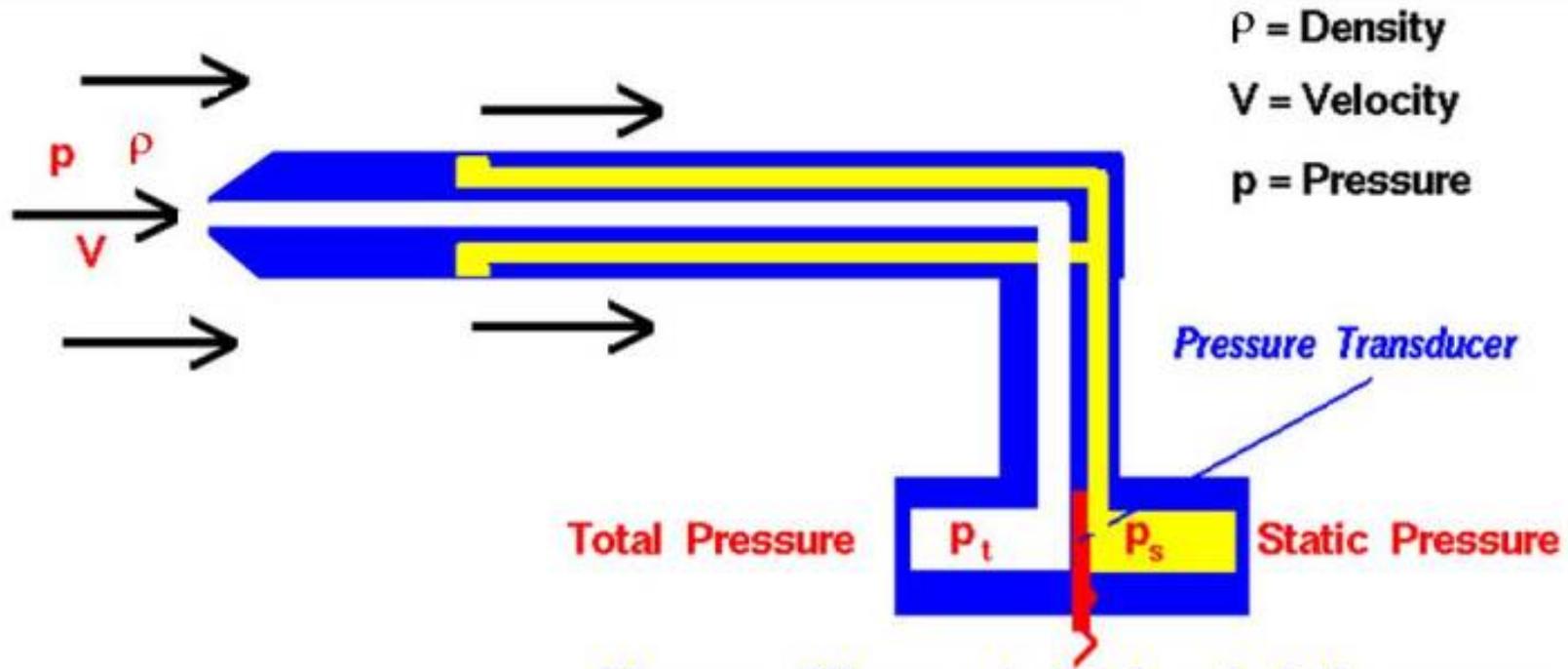
The background of the slide is a light blue color with a repeating pattern of question marks in various shades of blue and green, scattered across the entire area.

F5-12 Bernoulli's Principle?



Pitot-Static Tube Prandtl Tube

Glenn
Research
Center



Bernoulli's Equation:

Measure difference in total and static pressure

static pressure + dynamic pressure = total pressure

$$\left(p_s + \rho \times \frac{V^2}{2} \right) = p_t$$

Solve for Velocity:

$$V^2 = \frac{2(p_t - p_s)}{\rho}$$

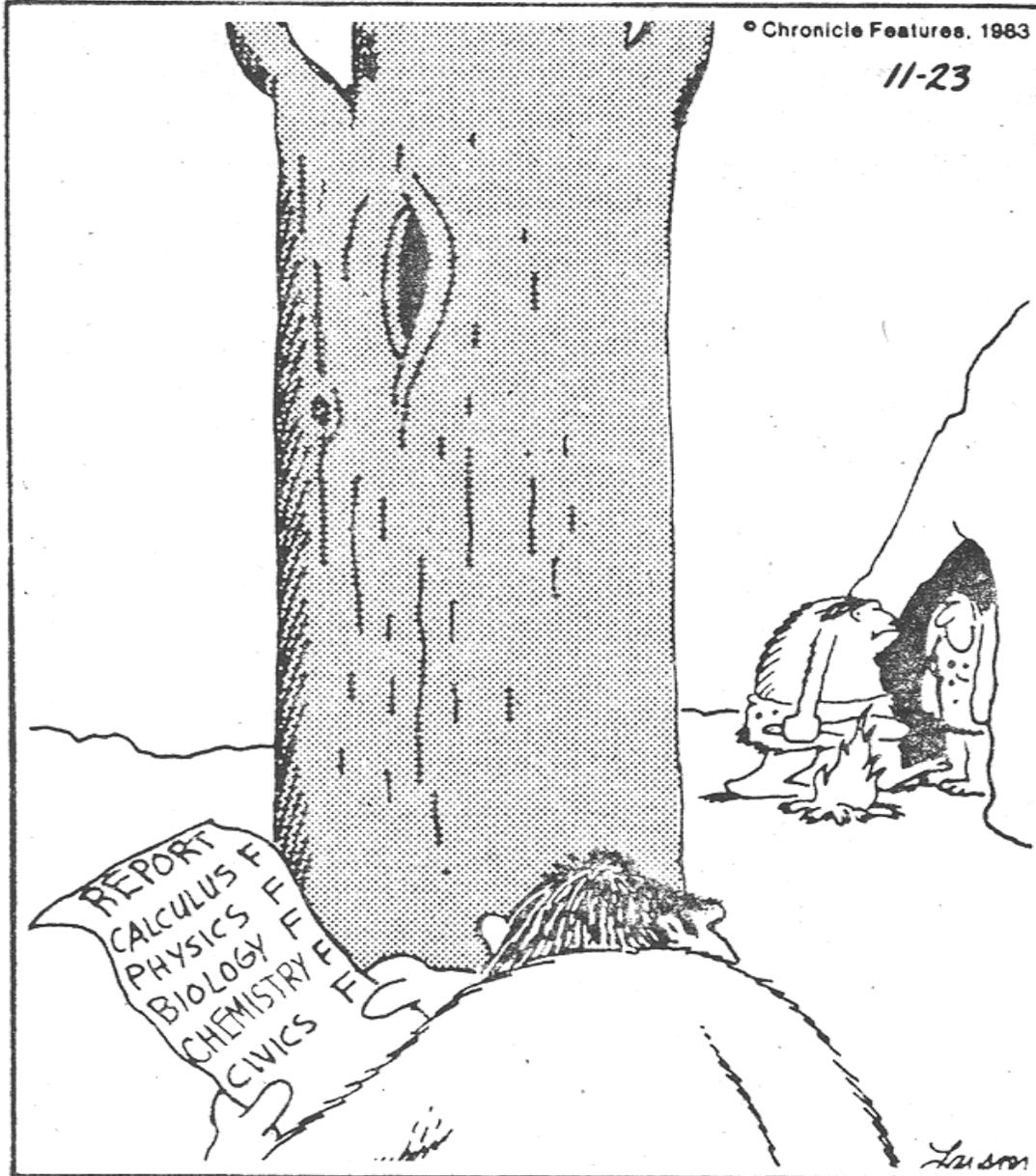
F5-09 HAIRDRYER AND PING PONG BALL

Bernoulli effect
Coanda effect
Entrainment
Kutta condition

Coanda effect with air

Coanda effect with water

THE FAR SIDE GARY LARSON



Grog hesitated, not wanting to face his parents.

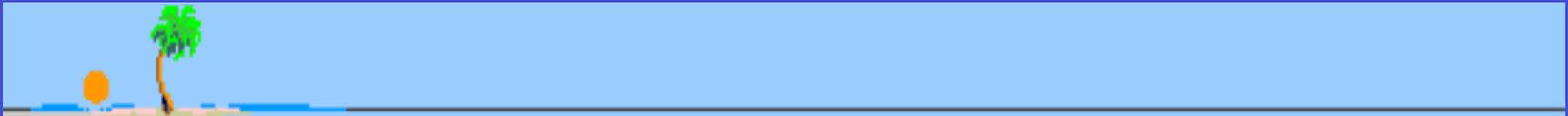


The End

Thank you for your attention!

We are on the web at

<http://www.physics.umd.edu/lecDEM>



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