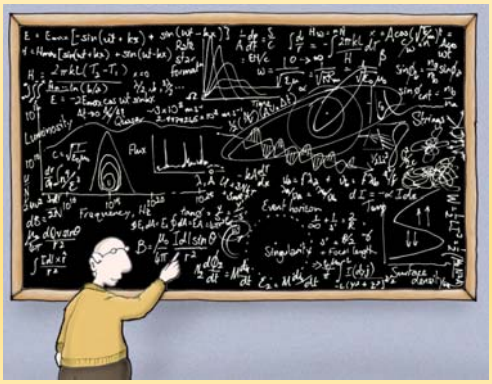
How to Evaluate a Scientific Talk/Colloquium
PHYS 496



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How to Evaluate a Scientific Talk / Colloquium ?

(1) Read the abstract and know what to expect:

- o Overview: eg. colloquium, plenary talk, lecture
- o Physics results: theory
- o Physics results: experiment
- o Physics results: instrumentation

(2) Have paper + pencil or electronic device for note taking ready
(no other use of electronic devices allowed!)

General Questions to seek answers for?

(1) What is the topic?
(2) How is the topic relevant for the field at large?
(3) Are there new results and what are they?
- ➔ Are their any additional references given for the new results?
- ➔ Did the speaker identify experts to contact with questions?

(4) What are the conclusions and what will be the impact of the results on the field?
- ➔ Incremental change?
- ➔ Discovery?
- ➔ Paradigm shifting?
- ➔ What are next steps?

(5) Are there novel and noteworthy scientific methods being used: what are they?
- ➔additional reference?
- ➔ who are the experts?

(6) Where can one find additional information: references, names of experts.

Generic Structure for Technical Presentations

- Motivation of the work presented
  - What physics was addressed?
  - What technology was used ?
  - Definition of special vocabulary?
- Methods
  - Formalism / Apparatus / Procedures / Raw Data
- Results
  - Identify graphs, tables, numbers, equations that represent results
  - Identify principal difficulties and uncertainties
- Conclusions
  - How are the results relevant: with regards to the physics in the field?
    with regards to scientific methods or instrumentation?

How to Evaluate a Scientific Talk / Colloquium

- Overview: eg. colloquium, plenary talk, lecture
  - ➔ what physics question is being addressed?
  - ➔ what is its relevance?
  - ➔ be open to follow "pedagogy of the talk" the talk is intended to be understandable for a broader audience …
  - ➔ note references to additional overview material
  - ➔ which results were included (note down references)
  - ➔ what is the status of the field and what are next steps?

How to Evaluate a Scientific Talk / Colloquium

- Physics results: theory
  - ➔ you may be not the audience the talk aims at!
  - ➔ what physics question is being addressed?
  - ➔ do not worry about details of the formalism - record reference to relevant overviews.
  - ➔ identify formalism & methods used - record references to original papers.
  - ➔ identify results and understand relevance.
  - ➔ how do the results compare to experiment?
  - ➔ are there new measurements proposed?
  - ➔ talk to the speaker after the talk, ask questions and tell them about how your own work relates to theirs.

How to Evaluate a Scientific Talk / Colloquium

o Physics results: experiment

- ➔ you may be not the audience the talk is addressed to!
- ➔ what physics question is being addressed?
- ➔ what is the relevance of this physics?
- ➔ how is the measurement related to the physics?
- ➔ what is the experimental method being used?
- ➔ record references to instrumentation papers, overviews, experts on the experimental method.
- ➔ what are the challenging experimental issues and experimental uncertainties.
- ➔ what are the results?
- ➔ experiment vs theory (within errors)
- ➔ talk to the speaker after the talk and tell them how your work relates to theirs.

How to Evaluate a Scientific Talk / Colloquium

o Physics results: instrumentation

- ➔ what is the motivation for the instrumentation development?
- ➔ note references to experiment or theory description of these fields.
- ➔ how does the instrument work? What is the physics it is based on?
- ➔ What are its performance parameters: energy or position resolution, linearity, noise, … ?
- ➔ who uses the instruments (labs or/and people)?
- ➔ write down references and expert names and contact info?
- ➔ is the instrument going to be commercially available? If yes, record manufacturer and vendor.
- ➔ make sure to stay to talk to speaker after the talk.