

# The PHY Layer is dead ???



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Perhaps the question is not as obvious as it seems. *Define dead*

- No more performance gains at a reasonable cost?
  - Link performance is indeed approaching fundamental limits
  - System performance is still very poorly understood (2x Throughput per generation):
    - MIMO Versus Beam forming
    - Relays
    - Equal Rate Versus Equal Power
- Too difficult to publish ?
  - Relevant, novel, high quality work is always publishable.
    - Need to use realistic propagation models
    - Closed form analysis not always possible
    - Must use appropriate tool for each problem.
- No more interest?:
  - Over 600 participants at the launching of LTE-A. Key performance advantages to come from PHY layer:
    - MIMO, Relays, Wide Band widths, disjoint spectrum
    - Intense industry activity.
    - Air interface race.
    - No funding ?