EEM 323

ELECTROMAGNETIC WAVE THEORY II

PLANE WAVE INCIDENCE

AT PLANAR BOUNDARY

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Önemli not: Ders notlarındaki şekillerin hazırlanmasında internet ortamından faydalanılmıştır. Özellikle belirtilmeyen tüm şekil, tablo, eşitlik ve denklemler vb. "D. K, Fundamentals of Engineering Electromagnetics, Addison-Wesley Inc." ile "D. K, Field and Wave Electromagnetics, Mc-Graw Hill Inc." kitabından taranarak elde edilmiştir. Alıntıların kaynağına kolay ulaşılabilmesi maksadıyla numarası ve altyazıları da gösterilmektedir.

DERS KİTABI

[1] David Keun Cheng, *Fundamentals of Engineering Electromagnetics*, Addison-Wesley Publishing, Inc., 1993.
veya David Keun Cheng, Çeviri: Adnan Köksal, Birsen Saka, *Mühendislik Elektromanyetiğinin Temelleri – Fundamentals of Engineering Electromagnetics*, Palme Yayınları.

KAYNAK / YARDIMCI KİTAPLAR:

[2] David Keun Cheng, *Field and Wave Electromagnetics*, Addison-Wesley Publishing, Inc. *veya* David Keun Cheng, Çeviri: Mithat İdemen, *Elektromanyetik Alan Teorisinin Temelleri – Field and Wave Electromagnetics*, Literatür Yayıncılık.

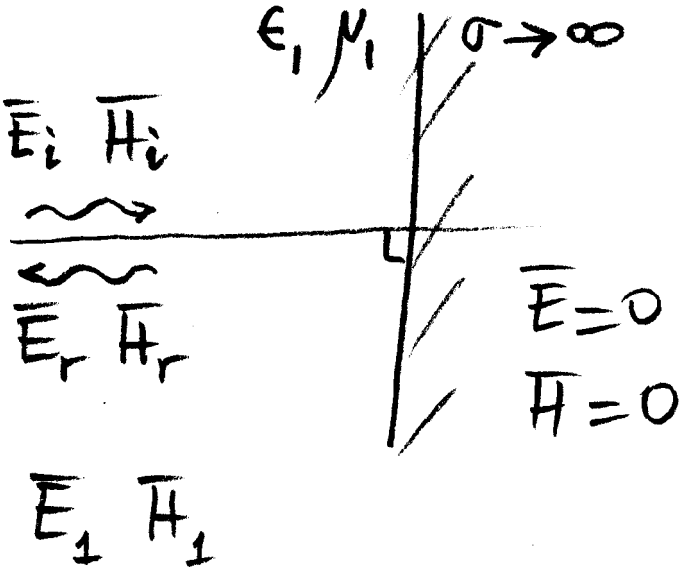
[3] Stanley V. Marshall, Richard E. DuBroff, Gabriel G. Skitek, *Electromagnetic Concepts and Applications*, Dördüncü Basım, Prentice Hall International, Inc., 1996.

[4] Joseph A. Edminister, Elektromanyetik, 2. Baskıdan çeviri, Çevirenler: M. Timur Aydemir, E. Afacan, K. C. Nakipoğlu, Schaum's Outlines, McGraw Hill Inc., Nobel Yayın Dağıtım, Ankara, 2000.

PLANE WAVE INCIDENCE AT PLANAR BOUNDARY
BASIC PROBLEMS TO BE SOLVED IN THIS LECTURE

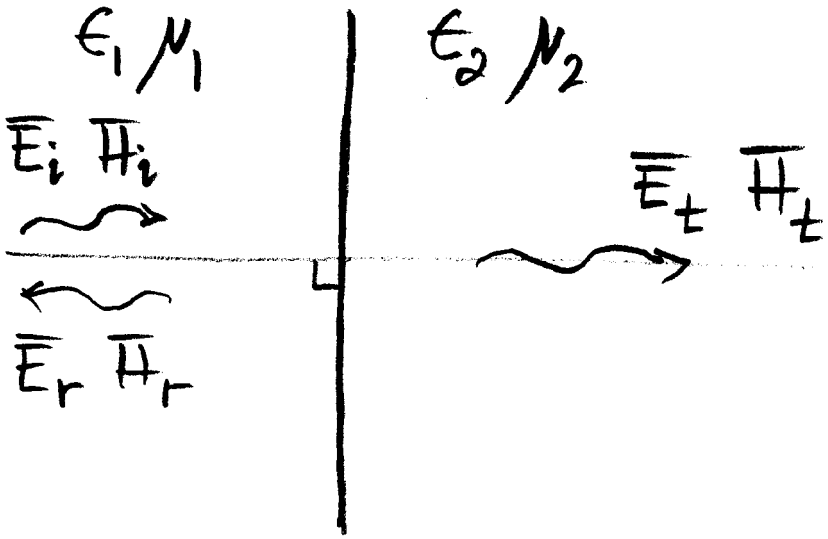
NORMAL INCIDENCE AT PLANAR BOUNDARY OF:

Dielectric – Perfect conductor boundary:



Problem:
Given the incident E field, calculate all the other fields

Dielectric – Dielectric boundary:

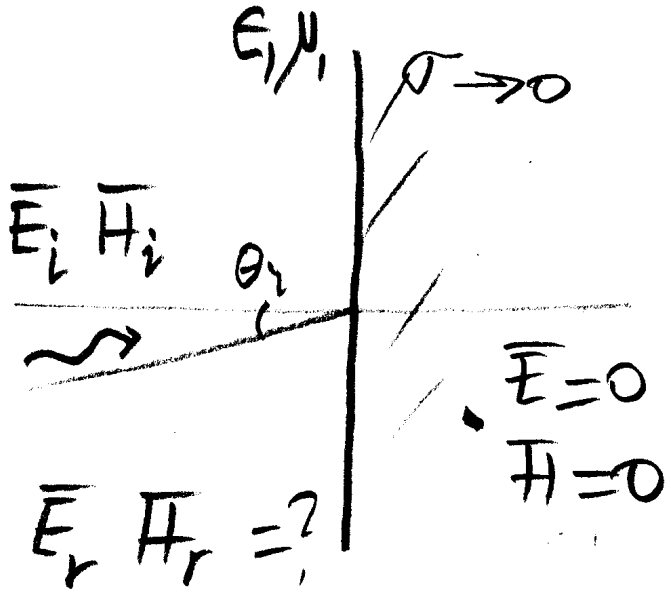


Problem:
Given the incident E field, calculate all the other fields

OBLIQUE INCIDENCE AT PLANAR BOUNDARY OF:

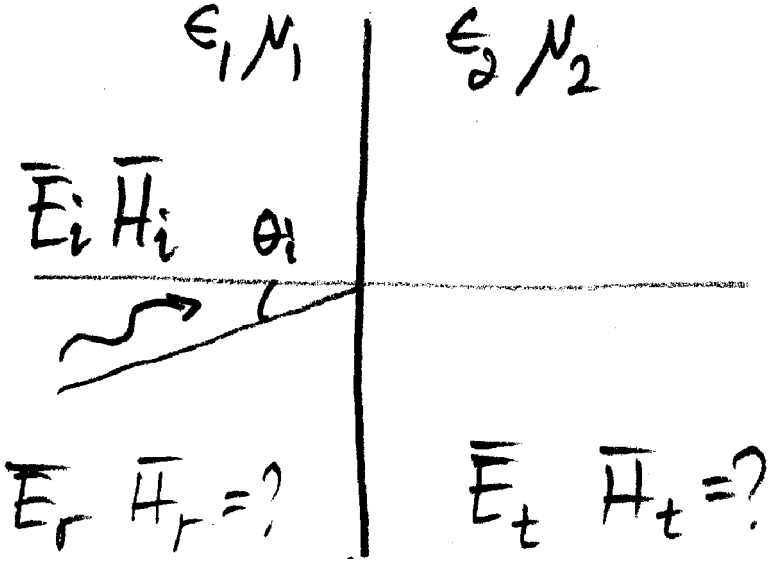
Dielectric – Conductor:

- Paralel polarization
- Perpendicular polarization



Dielectric – Dielectric:

- Paralel polarization
- Perpendicular polarization



OTHER PROBLEMS/CONCEPTS:

Definitions of;

Parallel and perpendicular polarization

Huygen's/Snell's law of reflection

Snell's law of refraction

Brewster angle of no reflection

NEXT TOPIC (If time is left):
Transmission lines