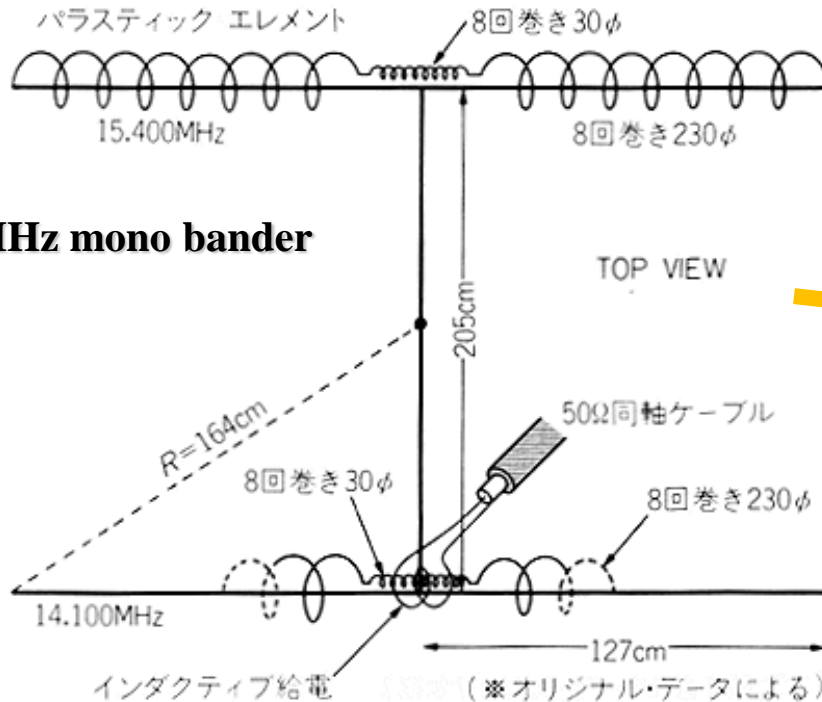


JG1UNE since 1976 JA1-8394 since 1965



小暮裕明 KOGURE Hiroaki

学生下宿で開局. コンパクトアンテナで
落成検査(当時の100Wは「直接免許」)
40年以上もアパマン・ハムで, 数々の
ベランダアンテナを考案・実験している



14MHz mono bander

Herical winding Cu wire along PVC pipe, only 2m x 2m in space.
Two elements Yagi-Uda performance, originated by W8YIN.



元祖アパマン・ハム



四畳半下宿の2階



MLA48 Project 10th

Since 2013 Over 150 members in the world



JG1UNE JE1WTR JA1QOJ JF1VNR



JF1IQJ Shimoji san E-field strength meter



JG1CCL
Uchida san
50MHz MLA



JR10AO
Nakajima san First prize
Ham Fair 2017 home brew
contest

136kHz~7MHz
JR10AO



MLA48 NEWSLETTER

<http://home.j00.itscom.net/kce/J/MLA48.html>



JE1UFR 3.5MHz/7MHz MLA



JJ1BMB Ohgo san
3.5MHz/7MHz MLA



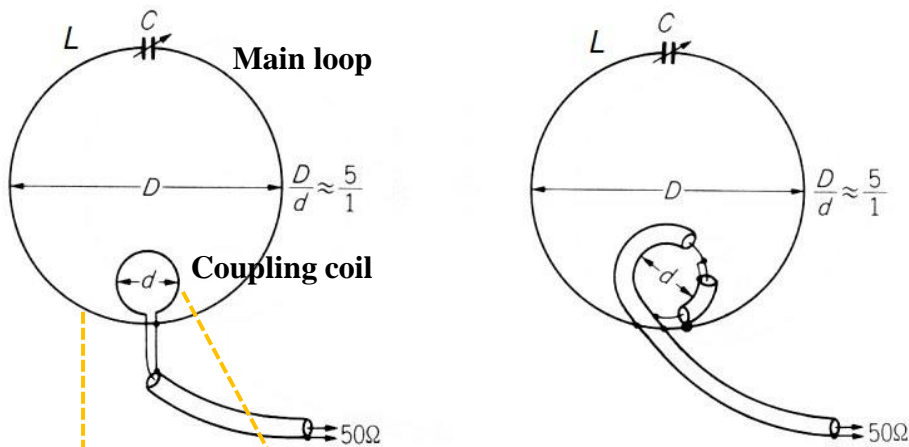
PAT: Perfect Antenna
Tuner by Nakajima san



Unique tuner

More at booth J-28

MLAは超コンパクト(波長の1/10~1/5)! 工作もカンタン!



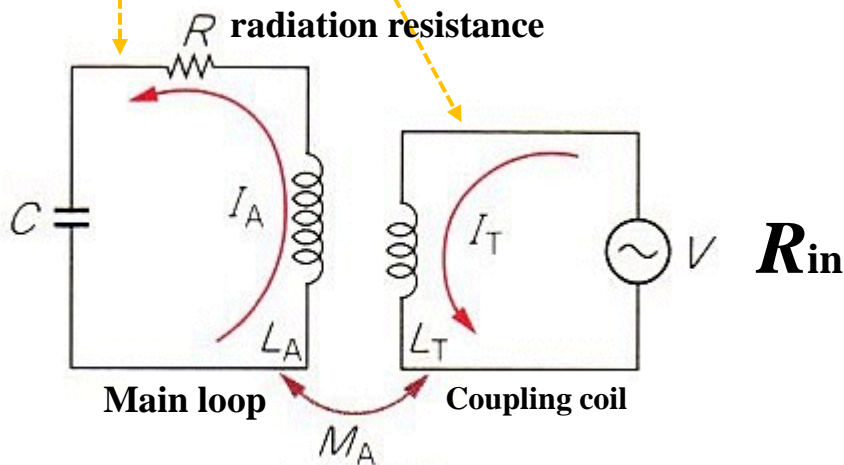
MLAの動作原理は至ってシンプル!
ループLとバリコンCによるLC共振

Simple principle than dipole antenna
Both a **visible inductance L** and
a **visible capacitance C** can resonate.

$$f_0 = \frac{1}{2\pi\sqrt{LC}}$$

Overall length or D might be less than 1/10 of wavelength in definition

... same as a circuit theory



$$Z_{in} = \frac{R(\omega M_A)^2}{R^2 + \left(\omega L_A - \frac{1}{\omega C}\right)^2} + j \frac{R^2(\omega L_T) - (\omega M_A)^2 \left(\omega L_A - \frac{1}{\omega C}\right) + \omega L_T \left(\omega L_A - \frac{1}{\omega C}\right)^2}{R^2 + \left(\omega L_A - \frac{1}{\omega C}\right)^2}$$

$$R_{in} = R \left(\frac{L_T}{M_A} \right)^2$$

...final simple expression **when resonating**

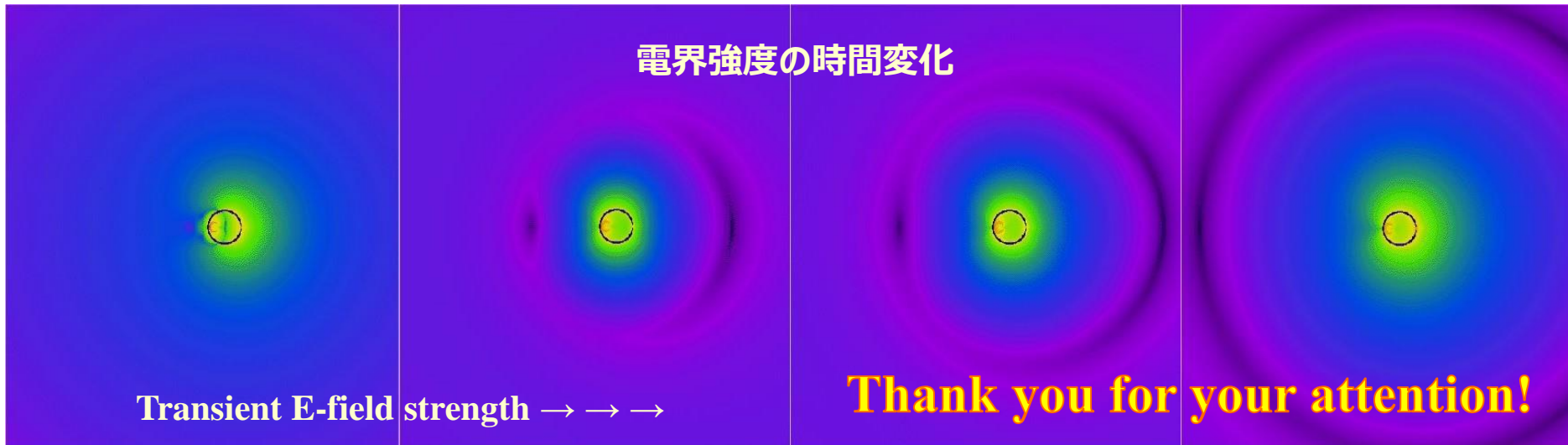
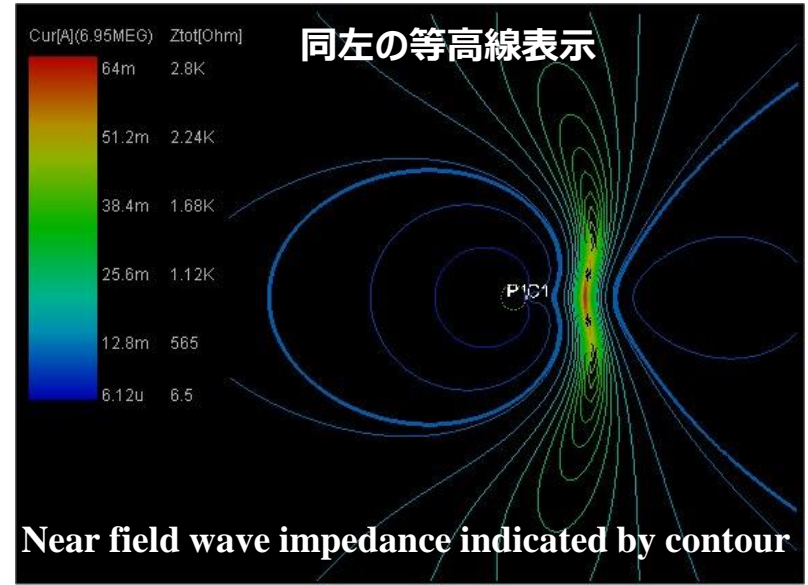
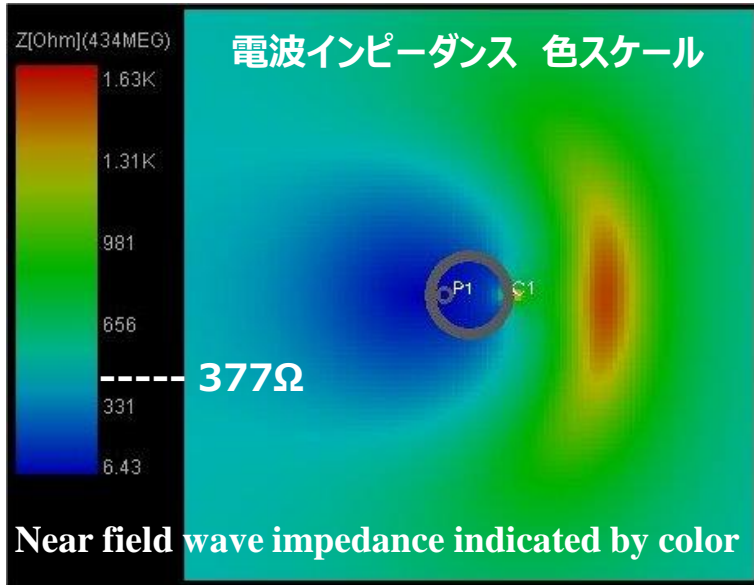
結合コイルの L_T と、相互インダクタンス M_A で、入力抵抗 R_{in} を50Ωに調整する

Conceptual equivalent circuit for the MLA

MLAから空間へ旅立つ電波

MLA48プロジェクトのブースは **J-28**

MLA48プロジェクトメンバー JA5KVK 小川さんプログラムの電磁界シミュレータ S-NAP Wireless Suite を使用



Coupling loop on the left.

Electric flux line cut to loop ahead of a capacitor on the right and grows to large loop to be radiated.