

RADIATION REACTION:
WHERE ARE WE GOING NOW?

BERNARD WHITING
(UNIVERSITY OF FLORIDA)

SUM UP ? (REACTION)

CHEW OUT ? (SELF)

LEAD OFF ? (TOPICS)

ALL OF THE ABOVE!

BUT FIRST

WHERE ARE WE CONC. DETWIGLER?

- STILL NO GAUGE INVARIANT RESULTS
- STILL NO $\ell=0, \ell=1$ RESULTS FOR KERR
(COMPATIBLE WITH MODE DECOMPOSIT.)
- STILL NO INVERSION OF TEUKOLSKY FORMALISM SURROUNDING SOURCES
- PRESCRIPTION FOR WAVEFORMS!

WHERE ARE WE GOING?

- NEARLY GAUGE INVARIANT RESULTS
- STRONG THRUST ON KERR (?)
- VECTOR DECOMPOSITION \rightarrow GAUGE FREEDOM \rightarrow METRIC DECOMPOSITION
- NEW RESULTS ON DIPOLES, SPINNING PARTICLES
- GRAVITATIONAL CASE

PROBABLE
HERE?

$s_0, \ell s_1$
 ℓs_2 (SCALARS)

WHERE IS FIELD?

- MERGING APPROACHES (MODE SUM)
- DEVELOPING SIMPLE UNDERSTANDING FOR UNRESOLVED ISSUES (THANKS ORT)
- PRACTICAL APPROACHES (YESTERDAY)
- COULD USE BETTER UNDERSTANDING OF "R" AND "S" FIELDS

=> LOCAL PHYSICS AND

ROLE FOR PRINCIPLE OF EQUIVALENCE

... TWO FURTHER SIMPLE
EXAMPLES FOR CLARIFICATION:

MOVING CHARGE - LORENTZ FORCE LA
NO LOCAL SIGN OF RADIATION FIELD

NO } NEWTONIAN ORBIT - FIND ψ^3, ψ^4
FAIL ! } $l=0, 1$ PARTS. SHOW $\Omega^2 \rightarrow \frac{GM}{R^3} (1 - 2\frac{M}{R})$

BIG THANKS

• TO ORGANIZERS

• TO OTHER SPEAKERS

REVIEWS : (MY RESPONSE ONLY)

POISSON (PERSPECTIVES)

FUTAMASE (UNAMBIGUOUS 3PN)

SHIBATA (NUMERICAL ADVANCE)

REPORTS :

NAKANO ($l=1$ EVEN PARITY)

THINGSAN (GAUGE INVARIANT, RECONSTRUCTION)

TANAKA (NEW CONTROLLED \tilde{S} , \tilde{R} FIELDS)