



On a set of 20th century monumental events that shaped the modern discipline of ocean wind wave's research

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History is made up of individual events. The modern ocean wind waves research has been active for nearly 70 years since the early years of the decade of 1940's while the World War II was still fighting in earnest and Sverdrup and Munk were embarked on an unprecedented attempt to make wave condition prediction for Navy Amphibious forces carrying out landing operation. That was certainly a monumental event that started the modern ocean wind wave's research. Here I wish to present a set of other monumental events in the intervening years which, in my personal view, are vital to the formation of our present day conventional ocean wind wave's research:

- Circa 1945: The war time invention of underwater pressure wave gage that measures pressure fluctuations induced by surface waves and also marked as the start of single-point wave measurements prevalent today.
- Circa 1950: When oceanographer Pierson met statistician Tukey and ocean wave spectrum analysis was thereby born.
- Circa 1952: Something old something new – Longuet-Higgins introduced the distribution function of Load Rayleigh to the emerging ocean wave data analysis and Rayleigh distribution has been the mainstay of ocean wind wave's research ever since.
- Circa 1953: Neumann started the quest to formulate a wind wave spectrum with his impressive first empirical spectrum before spectrum was widely measured.
- Circa 1957: Phillips worked out the resonance theory for wind wave's generation.
- Circa 1957: Miles simultaneously developed the shear flow model for wind wave's generation, complementary to Phillips theory.
- Circa 1959: Hasselmann formulated the source function to start the first framework of comprehensive wind wave modeling.

These are all the basic innovative milestones that the bulk of the conventional ocean wind wave research studies today were evolved from. While the monumental status of these works may represent merely the personal opinion of a single aficionado, I do feel that they were the ones that sowed a rich fertile ground from which a whole sphere of wind wave's research over the last 7 decades was stemmed from and also most of today's practices in ocean wind wave's research were evolved, directly or indirectly, from those original works. As we are now well into the second decade of the 21st century, we can only hope that at some time, a new period of rejuvenation like those flowerishing 1950's can be reshaped to further expand our knowledge on the wind wave research to take further advantages of the many new technological advancements of the new century has to offer and lead us to the true understanding of the ubiquitous but still elusive ocean wind waves which we are all mesmerized to study them!