Recollections about Zeldovich

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Photo Zeldovich, 1987, QG Seminar
Meetings with Zeldovich

- 1968, Teleneshty, Moldova, Library, Znanije-Sila
- 1973, Moscow, Physics Dept, Lomonosov, 5-th floor-
- 1977, spring, Special course on Cosmology for astronomers, held at Physics Dept, 5-19
- 1977-1978, PhD Defences at Phys. Dept, by D. Sokoloff, V. Khlebnikov
Continuation: Meetings with Ya.B.

- 1977 Public Lecture by Ya. B. Z. in the Khokhlov aula about recent development in Black Holes Physics (Hawking effect) and Cosmology. Participants: AA Starobinsky, V.R. Khalilov and other.

- 1979 Lecture by Ya.B.Z. in the Gumanitarian Faculties Building, MSU, for the Chairs of the Departments of Theoretical Physics from all over the USSR, Part.: I.M. Ternov, V.G. Bagrov, Yu. E. Perlin, V.G. Zhulego, me and many other- more than 40 speaches, and more than 150 sits occupied.

Miscellaneous meetings

- 1976 Moscow Avia Agentstvo on Leninski prospect. YaBZ was in hurry, I helped him to by a ticket.
- 1976 The Big Concert Hall of the Moscow Conservatory on Herzen str. Zeldovich was there with his wife and came there by a green Mercedes. I was there with one of my girl-friends. Symphonic Concert
Meetings with Zeldovich

- 1981, Shternberg Institute, Zeldovich read one of my recent article and Zeldovich greeted me
- 1987, spring The Kapitza Institute in Moscow. Seminar on High Temperat. Superconductivity, Chair: Sergej Kapitza, Participants: Zeldovich with a young woman, V.B. Braginsky, Chudinov, Yuri Gnedenin, Nikolay Brandt, me &m.oth
- Same day: I visited the Cabinet of Zeldovich, which was at the Landau Institute
The QG Seminar (see Photo) was held in a Conference Hall at the Vernadsky Metro Station. I seated all the first day near Zeldovich and Grishchuk.

The QG Seminar, 3rd day, A. Zelnikov photographed us, sitting near Zeldovich, Sakharov and Bryce deWitt.

QG Seminar, We tripped after the finish of Seminar to the Shternberg Institute together with Yakov Borisovich and Leonid Grishchuk, A. Linde and Valery Frolov.
Last meetings

- 2 December 1987 I called to Institute of Space Research from Chisinau. ID Novikov either Vladimir Lukash told me that Zeldovich has died on this morning.
- One week later: I was at the Novodevichieje Cemetery in Moscow with flowers to the Tomb of Zeldovich.
Zeldovich with formula 1

\[ \Delta E_{nk jm_j} = \frac{2mm_j}{2l+1} \cdot \frac{ma(mM)^4}{n^3l(l+\frac{1}{2})(l+1)} \]

1. For KERR, particle mass, projection of the total momentum, orbital mom.

\[ 2l + 2 + \frac{\text{expression } (m_j,l)}{(2l-1)(2l+3)} \]

For KERR, \( a \neq M, a < \sim 0.5, m - \text{particle mass, } m_j - \text{projection of the total momentum, } l - \text{orbital mom.} = \frac{|k|}{-k - 1} \]
2. Ya. B. Zeldovich, Analog of the Zeeman effect in the gravitational field of a rotating star, JETP Letters, 1, 95, 1965
Fine structure Reissner-Nordstom

\[
\left( \frac{4\pi}{m} \right)_{nklm_{j}} = 1 - \frac{(mM+eQ)^{2}}{2n^{2}} + \frac{15(mM+eQ)^{3}(mM+eQ/5)}{8n^{4}} - \frac{(mM+eQ)^{2}}{2n^{3}(l+1/2)} + \frac{(mM+eQ)^{3}\left\{ 3mM + \frac{mM+eQ}{4k} - \frac{3\delta_{l}^{0}(mM+eQ)}{2} \left( \frac{1}{2} + l+1/6k \right) \right\}}{n^{3}(l+1/2)}
\]
Explanations

- Particle’s and Hole charge
  \[ nM = \frac{|e\phi|}{2}, e, \phi \]  
  - Particle’s and Hole charge

- \( E < mc^2 \)

- Main, orbital and quantum number, related with operator
  \[ \lambda = \left\{ \begin{array}{c} k \end{array} \right\} \]
  - Main, orbital and quantum number, related with operator

**NOTE:** Formula contains contact term due to application of an approximate metric. No radial functions were used here.