HERTZ LECTURE.

PHYSICAL REVIEW LETTERS

DESY Lecture on Physics 2022

VOLUME 90, NUMBER 2 PHYSICAL REVIEW LETTERS First Results from KamLAND: Evidence for Reactor Antineutrino Disappearance K. Eguchi, S. Enomoto, K. Furuno, J. Goldman, H. Hanada, H. Ikeda, K. Ikeda, K. Inoue, K. Ishihara, W. Itoh, T. Lucamoto, J. T. Kawachima, H. Kinochita, V. Kichimoto, M. Kona, V. Kocoki, T. Manda, J. T. Miteni, J. W. Itoh, J. Kocoki, J. T. Manda, J. T. Miteni, J. W. Itoh, J. Kocoki, J. T. Manda, J. T. Miteni, J. W. Itoh, J. K. Ikeda, J. K. I K. Eguchi, S. Enomoto, K. Furuno, J. Goldman, H. Hanada, H. Ikeda, K. Ikeda, K. Inoue, K. Ishinara, W. Itoh, T. Iwamoto, T. Kawaguchi, T. Kawashima, H. Kinoshita, Y. Kishimoto, M. Koga, Y. Koseki, T. Maeda, T. Mitsui, M. Mahaiima, M. Mahaiima, H. Kinoshita, Y. Kishimoto, M. Koga, Y. Koseki, T. Maeda, T. Mitsui, M. Mahaiima, M. Mahaiima, H. Chimina, H. Chimina, M. Chima, M. I. Iwamoto, I. Kawasmina, I. Kinoshita, I. Kishimoto, M. Koga, I. Koseki, I. Maeda, I. Milsui, M. Moloki, K. Nakajima, M. Nakajima, T. Nakajima, H. Ogawa, K. Owada, T. Sakabe, I. Shimizu, J. Shirai, F. Cuarti, J. V. Tarana, L. Wilson, J. Shirai, J. Shir M. MOLOKI, K. Nakajima, M. Ivakajima, T. Ogawa, R. Owana, T. Sakane, T. Shimaza, J. Shimaza, J. Shimaza, J. Shimaza, J. Shimaza, J. Shimaza, J. M. Makinan, J. D. M. Mai, J. A. Diopha, J. F. Valenchan, J. R. E. Bargar, J. V. D. Chan, J. M. D. Dacoweli, J. D. A. Dwyar, J. D. A. Dwyar, J. D. A. Dwyar, J. Shimaza, J. Chan, J. M. D. Dacoweli, J. D. A. Dwyar, J. D. A. Dwyar, J. Shimaza, J. Chan, J. Chan, J. D. A. Dwyar, J. D. Chan, J. D. Chan, J. D. A. Dwyar, J. D. Chan, J. Chan, J. Chan, J. D. Chan, J. Chan, J. D. Chan, J. Chan, J F. Suckane, A. Suzuki, A. Iaua, O. Iajima, I. Iakayama, A. Iamae, D. Watanane, J. Dusemiz, Z. Djurcu, K. McKinny, D.-M. Mei, A. Piepke, E. Yakushev, B. E. Berger, Y. D. Chan, M. P. Decowski, D. A. Dwyer, M. F. Luk, M. F. Luk, M. Handon, J. F. Luk, J. H. Murayama, D. P. Nyoron, J. D. R. Nyoron, J. R. R. Luk, J. S. J. Freedman, ³ Y. Fu, ³ B. K. Fujikawa, ³ K. M. Heeger, ³ K. T. Lesko, ³ K.-B. Luk, ³ H. Murayama, ³ C. A. Winston, ⁴ C. A. Win S. J. Precuman, I. Pu, D. K. Pujikawa, K. M. Piecger, K. L. Lesko, K.-B. Luk, H. Muirayama, C. E. Okada, A. W. P. Poon, H. M. Steiner, L. A. Winslow, G. A. Horton-Smith, R. D. McKeow B. Tipton, ⁴ P. Vogel, ⁴ C. E. Lane, ⁵ T. Miletic, ⁵ P.W. Gorham, ⁶ G. Guillian, ⁶ J. G. Learned, ⁶ J. Maricic, ⁶ B. Hipton, P. voger, C. E. Lane, T. Ivinetic, P. W. Gomain, G. Gunnan, J. G. Learneu, J. Marie, S. Pakvasa, S. Dazeley, S. Hatakeyama, M. Murakami, R. C. Svoboda, B. D. Dieterle, M. Di Marie, J. G. Learneu, J. Marie, J. G. Learneu, J. W. Dieterle, M. Di Marie, J. W. Dieterle, M. Dieterle, M. Dieterle, M. Dieterle, M. Dieterle, M. Dieterle, M. Dieter G. Gratta, K. Ishii, N. Tolich, Y. Uchida, M. Batygov, W. Bugg, 10 H. Cohn, 10 A. Kozlov, 10 Y. Nakamura, 10 L. De Braeckeleer, 11 C. R. Gould, 11 H. J. Karwowski, 11 D. M. Markoff, 11

Where do we come from 2 defining Market of Strongly Interacting Massive Particles Where do we come from 2 defining Market of Strongly Interacting Massive Particles Where do we come from 2 defining Market of California, Berkeley, California 94720, USA Perspective for Market Orlando Laboratory, University of California 94720, USA Lemest Orlando Laboratory, University of California 94720, USA **Perspective from Physics**

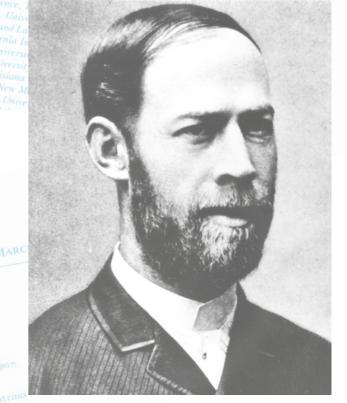
Prof. Dr. Hitoshi Murayama

- Berkeley Center for Theoretical Physics University of California, USA
- Lawrence Berkeley National Laboratory Berkeley, USA
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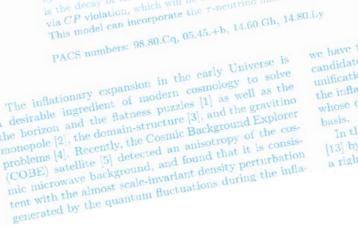
September 28, 17:45 h **DESY main auditorium** https://webcast.desy.de

Deutsches Elektronen-Synchrotron DESY A Research Centre of the Helmholtz Association It has been a millennia-long question by the human beings, traditionally in the context of religions, philosophy, literature, and art. In recent decades, physics made strides to come up with partial answers to this question. Chemical elements we are made of came from exploding stars, as observed by neutrinos and gravitational waves. Stars were born out of dark matter. Our original seeds came from inflation. I also discuss what progress we anticipate in the PHYSICAL REVIEW LETTERS Chaotic Inflation and Baryogenesis by Right-Handed Sneutrinos near and more distant future.

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Heinrich Hertz 1857 Hamburg-Karlsruhe-Bonn 1894



the inflaton among scalar partners of the fermion species

[13] by identifying the inflaton with the scalar partner of a right-handed Majorana neutrino. Being gauge singlet.

