




کراچی یونیورسٹی

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Department of Geography

The Direction of Qibla (Makka)

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Knowledge of the direction of *Qibla* (*Ka'aba*) is essential for the correctness of salat (prayer). It is the duty of every Muslim to make an effort to find out the direction of *Qibla* and turn his face towards it before starting the prayer. *Allah Subhanahu wa Ta'ala* says in the Holy Quran: "And whence-so-ever you come forth (for prayer) turn your face in the direction of the Sacred Masjid" (Sura 2:149). In the United States of America, the direction of *Qibla* is, generally, taken as northeast, based on the definition that the direction of *Qibla* at a place is tangent to the geodesic (*i. e.*, the shortest distance along the surface of the globe) connecting that place and Makka. On the other hand, a group claims that the United States (of America) is in the northwest of Saudi Arabia. Hence, the direction of *Qibla* for the people in the United States is southeast. Its definition of the direction of *Qibla* is the following. Erect a normal to the surface of earth at Makka and at the place, where the direction of *Qibla* is to be determined. These two lines determine a plane. Since the earth is very nearly a perfect sphere (equatorial and polar radii do not differ by more than 0.35 %), the two normals pass through the center of earth and, hence, are coplanar. The direction of *Qibla* is the tangent to the curve made by the intersection of this plane and the surface of earth. The talk tried to resolve this discrepancy.

Reference: Kamal SA, the Direction Qibla (Makka), *Science and Technology in the Islamic World* 5 (3), 1987, 131-134, full text: <https://www.ngds-ku.org/Papers/J06.pdf>

About the Speaker: Professor Dr. Syed Arif Kamal, Professor, Department of Mathematics, University of Karachi and Convener, National Curriculum Revision Committee in Mathematics, Higher Education Commission, obtained his BSc (Honors), MSc and PhD from University of Karachi, MS from Indiana University, Bloomington, United States and MA from the Johns Hopkins University, Baltimore, United States as Quaid-é-Azam Scholar. His awards and honors include throughout First-Class-First Position and 4 gold medals for scholastic achievements. He is a member of American Institute of Aeronautics and Astronautics (AIAA) and International Brain Research Organization (IBRO). He acts as Subject Expert (Mathematics) on the Selection/Interview Boards of University of Balochistan, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) and Federal Public Service Commission. He is, also, a referee of *Clinical Biomechanics* (Elsavier), *Proceedings of the Pakistan Academy of Sciences* and *Pakistan Journal of Scientific and Industrial Research*. His research, teaching and administrative experiences in institutions of higher learning and R&D organizations span over 26 years. He served as chairman of his department during 2003-6. He has 94 papers to his credit in biomathematics, astrodynamics, relativity, physical mathematics and algebra. He has given 55 colloquia, guest lectures, presentations and seminars at various institutions of higher learning, including Air War College, the Aga Khan University, Higher Education Commission, the Abdul-Salam International Center for Theoretical Physics, Italy and Massachusetts Institute of Technology, USA. In addition, he has conducted 19 trainings as well as in-service and professional development courses.

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