Opening speech: Prof. Jürgen Renn, Chair of Humanities Section at the Max Planck Society

Dear Rector of the University of Havana, Miriam Nicado Garcia,
Your excellency, Ambassador Thomas Karl Neisinger,
dear friends and colleagues,

As Chair of the Humanities Section of the Max Planck Society it is a great pleasure for me to open this first Max Planck – Cuba Frontiers of Science Symposium. It is a historical event and I very much hope that it will be the beginning of a long and fruitful exchange and cooperation. But I am also aware, of course, that for many of you, this is not a new beginning but rather the continuation of long and productive relations between Cuban researchers and researchers from the Max Planck Society. Still, we all embrace this opportunity to pursue joint scientific interests with renewed momentum, and I would like to warmly thank the organizers, our hosts from the University of Havana, the German embassy, and the many collaborating institutions and last but not least, from the side of the Max Planck Society, Andreas Trepte, for providing us with this fantastic opportunity. I am impressed to see how many colleagues from both sides have accepted the invitation, among them prominent colleagues such as the Nobel Prize winner Klaus von Klitzing from the German side. It is a particular pleasure to also see so many younger colleagues among us, which means that the relay race of scientific cooperation will proceed into the future. The program is clearly future-oriented and promises important glimpses into innovative fields of research. But as I am a historian, there will be also glimpses into the past.

To begin with the Max Planck Society: it was founded after the Second World War, as successor of the Kaiser-Wilhelm Society which goes back to 1911. Today it is the leading organization of basic science in Germany with over 80 institutes, mostly working in highly interdisciplinary fields. Its hallmark is its independency: it funded by the federal state and the German regional states but its researchers are completely autonomous in choosing their research subjects and priorities. This independence is something that always needs to be defended. But is one of the reasons why the Max Planck Society has been able to attract some of the best researchers world-wide.

But it may in fact be useful to also realize the larger historical context in which we are meeting here. You all are aware that this is an exceptional meeting, for us Max Planck researchers, simply due to the the fact that it takes place here in Cuba. But Cuba itself is, in many ways, exceptional, and I mean not only the politics, the wonderful music, and other aspects of its rich culture, but I also mean the science in Cuba. In a recent book, the Cuban physicist Ernesto Altshueler has characterized the Cuban inventiveness and art of improvisation as “guerilla science.” The historian of science Angelo Baracca prefers to speak of an advanced scientific system in an underdeveloped country. Historically, in a world that has become, since the Spanish expansion and colonial rule, increasingly globalized, Cuba has played an exceptional role in many different aspects. It has served and continues to serve as a focal lens for the cultural and intellectual processes accompanying globalization. In fact, in Cuban people, customs, cultures, religious beliefs, and even knowledge there was always

mixture, giving way to synergisms that provided the basis for the concept of "transculturation" coined by Cuban sociologist Fernando Ortíz.

This concept reflects the cultural situation of Cuba, emerging as it does from a long history of colonial and imperial domination. It later inspired concepts such as creolization, mestizaje, and postcolonialism. But Cuban exceptionality is not limited to such broader cultural questions. It also comprises knowledge, and the natural sciences in particular. Science as practiced in Cuba has displayed an exceptional plasticity in its capability to adapt to an often improvised technological infrastructure; in its ability to respond to specific social and economic needs; but also in its openness towards diverse traditions and schools of research.

A few examples may help to capture this inventive spirit. The situation of the sciences in Cuba before the Revolution of 1959 depended on social and political conditions of subalternity that inhibited the technological and scientific evolution of the country. The majority of the Cuban economic and political elites, as well as foreign powers, exploited the island and had no interest in any kind of autonomous development. In the 1960s, after the revolution, a new spirit emerged also among the intellectuals. In 1961 a widespread campaign mobilized 100,000 teachers to eliminate illiteracy. As for science, the country did not just rely on foreign support, in particular from the Soviet Union, but also found innovative ways to use its scarce resources. For instance, Cuban physicists combined advanced Russian nuclear technology with a new silicon technology introduced by French physicists in international summer schools to advance the field of microelectronics. I will come back to these summer schools in a moment.

In more recent years, Cuban physicists improvised means for exploring the newly discovered phenomenon of superconductivity at high temperatures for ceramic materials and developed an advanced research activity in this field. The heavy burden imposed by the lack of funding and equipment due to the isolation of the country after the breakdown of the Soviet empire has been taken by Cuban physicists as a challenge to tackle new problems "under conditions of high tropicality", to use another one of Ernesto Altshueler's ironic expressions, such as studies of the collective behavior of ants or of the movement of sand, relying on modest material means and uncommon inventiveness.

Almost exactly 50 years ago, in December 1968, the Congreso Cultural de La Habana brought together a large international public, which also included many scientists who gave advice on basic choices for the development of Cuban science and, in particular, physics. This was welcomed by the local community. On that occasion, French and Italian scientists launched a proposal to initiate Escuelas de Verano. Between 1968 and 1973, these summer schools brought together in Cuba local scientists and their international colleagues in many disciplines. They introduced equipment, techniques, and materials that gave a strong impetus to scientific research in Cuba. Later, these international collaborations were followed up by intense collaboration between the Academy of Science of the German Democratic Republic and Cuban academic institutions.

All of this happened against the background of a dramatic historical context: 1968 was a time of great turmoil: the war in Vietnam and the assassinations of Martin Luther King and Robert Kennedy shook the United States; Moscow's tanks crushed the "Prague Spring;" the "French May" and its international extensions challenged traditional authorities, including the hegemony of the orthodox Communist parties in the West. In these years, Ernesto Ché Guevara became a hero for the youth in the West, while in Cuba he's in fact also known as an early promoter of microelectronics.

Today, the turmoil of world politics is no less challenging: from the Venezuelan crisis, to the rise of populism all over the world, denying global responsibilities such as that of mitigating climate change. In 1968 it was Cuban inventiveness, together with the characteristic openness of the Cuban scientific environment towards collaboration and exchange, that crossed bridges in a bipolar world and became an important backbone of the rapid development of education, science and technology. This is a spirit of openness, collaboration and innovation that, in my view, may today serve as an inspiration for our meeting but also for society at large. In this sense, I hope that our meeting will revive some of the positive "vibrations" – in German I would say: Aufbruchsstimmung – of 1968 and build bridges between different worlds, also between different disciplinary worlds, and perhaps even between science and society. I wish you all a pleasant stay in Havana and a very successful meeting.