The best introduction to what might be called "classical Aubry-Mather theory," is

Bangert, V.*Mather Sets for Twist Maps and Geodesics on Tori*, Dynamics Reported, Vol. 1, 1-56, Dynam. Report. Ser. Dynam. Systems Appl., 1, Wiley, Chichester, 1988.

This is already a lot of reading. Nonetheless, I will give a couple of other references. At a conference in Russia in 2002, I announced some results on Arnold Diffusion. I am still writing the proof. The title of the paper is

Arnold Diffusion, I: Announcement of Results.

A Russian translation appeared in

Sovrem. Mat. Fundam. Napravl. 2(2003), 116-130 (electronic),

and the original appeared in J. Math. Sci. (N.Y.) 124 (2004), no.5, 5275-5289.

The members of the audience might like to take a look at that to see what sort of application I intend to make of what I am going to talk about. What I will talk about is part of the proof of my results on Arnold Diffusion. It relies on generalizations of "classical Aubry-Mather theory" to more degrees of freedom. For generalizations to more degrees of freedom, the best introduction is Albert Fathi's

"The Weak KAM Theorem in Lagrangian Mechanics."

I'm not sure about the state of publication of this. I heard that it can be downloaded from his web site. On the web, I found that a version of it was published in The Cambridge Studies in Advanced Mathematics Series, vol. 88.

This will be much too much reading for most members of the audience, I am sure. It will not be necessary to read my announcement to understand anything I am going to say. It's relevance is that it explains the use I intend to make of what I am going to say. What I am going to say is part of the proof of the results that I announced there. While what I am going to say depends on results explained (for example) in Fathi's book, I think it would be better for beginners in the subject to study Bangert's paper, if that is the only thing they have time to study. It has concrete results, which I think that the reader will find interesting.