

# 地震、矿难、空难探秘

## Exploring Secrets of Earthquakes, Mine Accidents & Aircraft Accidents

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空难是否也与地应力变化有关呢？坐过飞机的人都知道，在飞机起飞和降落的过程中，禁止手机等有发射源的电器使用，以免对飞机中控制飞行的电信指令造成干扰，引起飞行事故发生。前面已经谈到在地震发生之前，会产生强大的电磁波信号辐射，这种电磁波的频率范围很宽，穿越的空间范围很广。据有关文献记载，在大地震发生前，这种电磁干扰信号有时会使收音机中断、电台信号遭到破坏，有的可能引起动物活动反常等等。那么这种强大的电磁信号在被起飞或下降的飞机仪表接收后，就有可能引起的飞行的电信指令发生畸变，有的也可能属于次生波范围对飞行员大脑造成不适或引起暂时的困惑、空白或瞬间昏迷。虽然地震的前兆信息能否对飞机飞行指令造成干扰，没有这方面的先例记载，但根据我们十余年来 MDCB 地震前兆监测仪在监测地震前兆信息所遇到的问题来看，这方面的可能性是完全存在的。

Could aircraft accidents be related to abnormal EM emissions caused by variation of terrestrial stress fluctuation? ..... According to our experience of the problems we have encountered during our monitoring of earthquake (EQ) precursors by our MDCB instruments, such possibility seems to exist.

MDCB 型仪器使用单片机检测时间，按照一定的时间间隔命令仪器进行数据采集，采集数据结束后，仪器自动恢复检测时间，在这样周而复始的循环监测过程中，有时仪器会出现死机现象，如屏幕显示的时钟不动、或光标到处跳动、或屏幕全黑、或屏幕全白。一旦这种现象出现，当天或最近 1-3 天远处很快发生较大地震。

During the early stage when the MDCB instrument was still using the single chip processor to check the time, it instruct the instrument to collect data in specific intervals, then, after completing collection of data, the instrument automatically returns to check the time. During the cycles of checking time – collect data, some times the instrument would get “stuck”, the screen would display no operating of the timing device, or the cursor would randomly jump from here to there over the screen, or the screen would turn black, or turn white. Whenever such phenomena appear, a rather strong EQ would occur during that day or within the next 1 – 3 days.

在 1998 年的一天，廊坊台站、西安台站、云南的思茅台站同时出现死机（廊坊、思茅同时来电话询问死机现象），这种现象一旦出现，随后地震发生的可信度几乎是 100%。5 级以上地震发生的机会很多，但对于监测仪器来讲，死机现象只是偶尔发生，显然这是个小概率事件。但不排除当飞机在起飞和降落期间，恰好受到地震前兆强大的电磁波信号干扰而出现故障的可能。如果是在飞行员毫无思想准备的情况下，那么就极容易引起飞行事故发生。考察飞机失事的原因，除了飞机自身原因或人为因素之外，有时很难找到出事的原因，是否与上述分析有关。

One day in 1998, the MDCB instruments at the Langfang station, the Xian station and the Yunnan Simao station simultaneously got “stuck” (the Langfang station and the Yunan Simao station both reported this by phone). When such phenomena appear, the reliability of an EQ to follow is almost 100%. The occurrence of EQs >Ms5 is frequent on the globe, but, the phenomena of the MDCB instrument getting “stuck” is a small probability event. But we can not rule out during the phases of takeoff or landing of aircrafts, the electronic operation system of aircrafts might also occur with errors due to interference by strong electromagnetic signals developing before EQs developing in nearby regions. If this occurred completely unexpected and unrealized by the captain of the aircraft, it might be easy for an aircraft accident to occur. Examining the reasons of aircraft accidents, after analyzing all factors related to the aircraft or crew, some times the cause is still not found, the above factors should also be studied.

这次 2004 年 11 月 21 日包头空难, 在包头附近就潜伏着一个震源区, 在 1996 年 5 月 3 日那里曾发生过一次 Ms6.4 地震。在 2003 年 11 月 4 日我们曾对该区做过一次地震短临预报, 结果在 2003 年 11 月 7 日至 11 日期间, 在我们预报的区域内发生了一个小震群, 见图 3。

There is a dormant epicenter area close to Baotou where the aircraft crash accident occurred on Nov. 21, 2004, where an Ms6.4 occurred on May 3, 1996. On Nov. 4, 2003 we predicted that an EQ might occur at this location, which in fact a swarm of small EQs occurred during Nov. 7 – 11, 2003, shown in Fig.3.

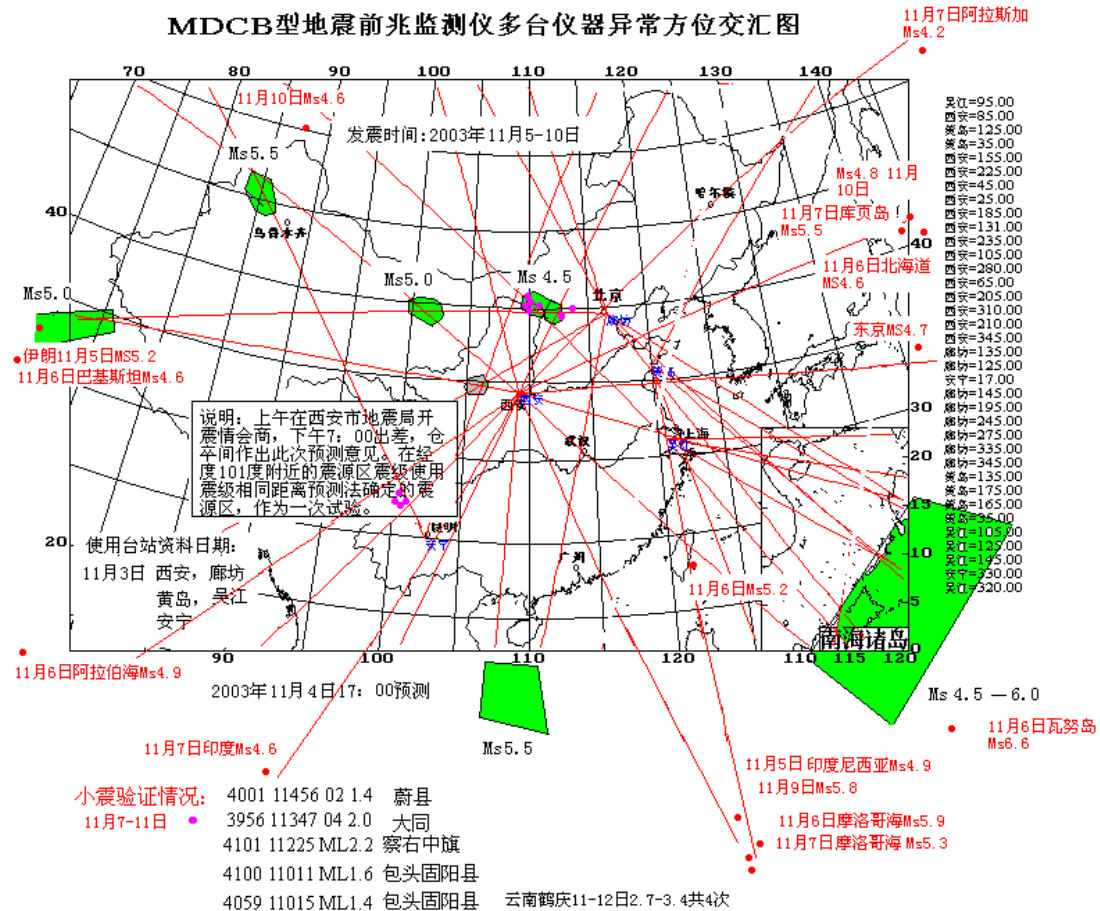


图3 2003年11月4日我们曾对包头附近作的一次地震预测和验证图

Fig. 3 Result of Nov. 4, 2003 prediction: EQ Ms4.5 might occur at 40E 110E close to Baotou

在 2004 年 6 月 30 日我们对该区又做过一次地震短临预报，结果在 2004 年 7 月 14 日在我们预报的区域内发生了一个 M4.0 小震。

On June 30, 2004 we again predicted an EQ might occur in this area, in fact an EQ Ms4.0 occurred in the predicted area on July 14, 2004, shown in Fig. 4.

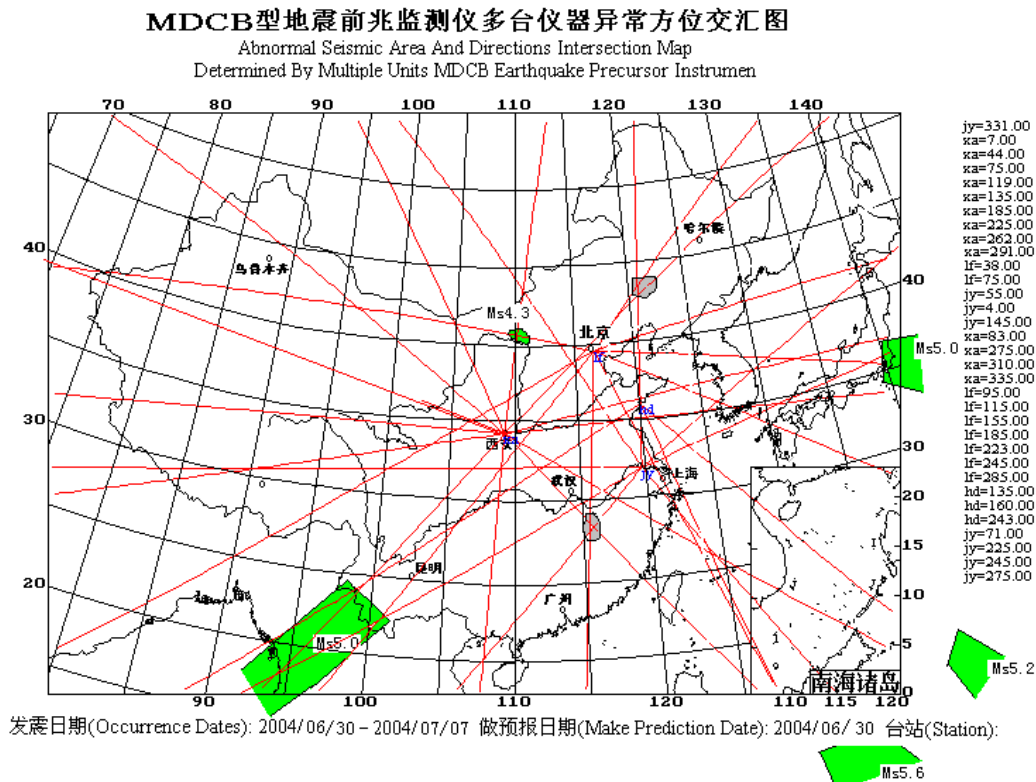


图 4 2004 年 6 月 30 日我们对包头附近作的一次地震预测和验证图

Fig. 3 On Jun 30, 2004 prediction: an EQ Ms4.3 might occur area 40E 110E close to Baotou

这次 11 月 21 日包头空难发生的地点是在西安台站北偏东 8 度空域，由于来自包头附近的震源区产生的电磁波可以从大气层、地壳经过多次反射达到西安被仪器接收，如果是从地下穿过来的，那么仪器监测的 5° 方位角上应该出现明显的异常，如果来自包头附近的震源区产生的电磁波从大气层经过多次反射到达西安被仪器接收，那么在 185° 方向上应该记录到这个震源区在这期间产生的电磁波异常。

The location of the aircraft crash on Nov. 21, 2004 was area 8 degrees slightly east from the Xian station. The electromagnetic waves generated from the epicenter area close to Baotou could transmit through two paths, i.e. through the crust, or through the atmosphere. For EM anomalies transmitting through the crust, the MDCB instrument should detect strong EM anomalies via the sensor at azimuth angle 5 degrees. For EM anomalies transmitting through crust surface – atmosphere – surface – atmosphere reflections, the MDCB instrument should detect strong EM anomalies via the sensor at azimuth angle 185 degrees.

按照这种认识，我们检查了西安台站 2004 年 9-11 月期间 5°、185° 两个方向在 8:00-12 时 4 个小时时间段内出现的异常次数累加值，结果如下表：

According to such understanding, we checked the accumulation value of abnormal number of signals during 08:00am – 12:00 of Sep. – Nov. 2004 at two directions, i.e. at azimuth angle 5 degrees and azimuth angle 185 degrees, resulting the table below:

月 M	11 (Nov.)						10 (Oct.)													9
日 D	21	19	16	15	9	4	30	28	27	24	23	21	20	19	15	14	13	10	7	2
5°	27	29	30	36	36	29	32	29	31	34	31	33	31	30	33	29	28	30	32	30
185°	22	28	24	22	17	31	19	24	35	25	21	24	16	16	28	29	21	13	19	26

表中记录的数据是仪器每 20 秒监测一次数据，然后对监测的数据进行分析，计算出某一个方向来的异常具体是来自哪个方位角，然后将相同的方位角按照 10° 一分区进行累加统计。飞机失事的时间是在 21 日 8: 11，表中的数据统计的是 8: 00 到 12: 00 的累加值，真正有用的时间段是在 8: 00—8: 11，按照 20 秒取样统计，最多是 33 次。在 2004 年 11 月 21 日 8: 00—12: 00 中监测的数据 27 次是集中在包 8: 00—8: 11 分出现的，还是分散出现的，这里很难确定。从 9 月到 10 月在 8: 00—12: 00 这个时间段内出现的较大异常次数分析，9 月份只出现一次，10 月份有 13 次，11 月份前 21 天有 6 次，其增长态势仅次于 10 月份。可见从进入 10 月份后西安台站 5 度方向上的震源区活动在急剧上升，但是否一定是包头附近的震源区，这里面又有一个多解性的问题。

Summary: After entering October 2004 seismic activities began to rapidly increase in direction at azimuth angle 5 degrees to the Xian station, but need to analyze data recorded by more MDCB units to determine the exact analysis related to the epicenter area close to Baotou.

如果上面分析的地震发生之前产生的强大电磁波脉冲可能会干扰飞机飞行的指令，那么可以采取 MDCB 型仪器的监测方式，在增大采样密度的情况下，监视机场所在空域内电磁波信号的变化规律，根据异常的发展趋势和已经取得的一些经验数据，随时研究飞机起飞、降落的前几分钟内电磁波的幅度和持续时间，预测在起飞、降落的时间段内是否可能出现对飞行指令造成干扰，适当推迟 1-几分钟，那么就有可能减少飞机不是自身原因所造成的飞行事故的发生。

If the above analysis indicates that strong EM wave pulse emission before occurrence of EQs might interfere with electronic instructions of aircrafts, then it should be possible to applying monitoring with MDCB-5 instruments, with increasing the data collection density (Note: for normal seismic activity monitoring, data collection is accomplished every 20 seconds, for aircraft safety monitoring data collection should be accomplished with shorter time intervals), to monitor the variation rules of EM emission in areas related to takeoff and landing of aircrafts around airport locations, and according to the development trend of EM anomalies and already obtained experience data conduct real-time study of the EM abnormal intensity and durations during the few minutes before aircraft takeoff and land, to predict if interference might occur during the takeoff and landing phase of aircrafts, and accordingly instruct takeoff and landing delays of one to a few minutes, which should reduce aircraft accidents caused by such natural phenomena reasons not related to the aircraft or crew themselves.

(Note: There is also another type of natural phenomena, studied by another researcher, which might also cause mysteries aircraft accidents – Chen I-wan)